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An Interpretative Phenomenological Analysis of Stress and Well-Being in Emergency Medical Dispatchers

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*This study explored stress and well-being among emergency
medical dispatchers (EMDs) who remotely provide crisis inter-
vention to medical emergencies through telehealth support.
Semistructured interviews with 16 EMDs were conducted, and
interpretative phenomenological analysis was used to identify
themes in the data. Results indicated that despite their physical dis-
tance from the crisis scene, EMDs can experience vicarious trauma
through acute and cumulative exposure to traumatic incidents
and their perceived lack of control, which can expound feelings
of helplessness. Three superordinate themes of operational stress
and trauma, organizational stress, and posttraumatic growth were
identified. Practical implications are suggested to enable emerg-
ency services organizations to counteract this job-related stress
and promote more positive mental health outcomes.*

*KEYWORDS emergency medical dispatcher, communications,
ambulance, stress, vicarious trauma, emergency services*

When an accident or health crisis places human life at risk, often the
spontaneous reaction by those at the scene is to dial their national emergency
telephone "hotline" number (e.g., "triple zero" in Australia and "nine-
one-one" in the U.S.). These hotlines enable direct access for community

members to emergency responders, including medical service support and resources for ambulance, rescue, and immediate first aid advice. The emergency medical dispatcher (EMD) who answers this telemedicine call becomes the pre-hospital carer whose skills and ability can directly affect patient outcomes. This initial response to crisis is often the most time critical phase and is, therefore, a pivotal stage in the medical care process. Devoid of visual and physical contact with the caller and the crisis scene, EMDs are required to provide this service remotely, using their verbal and audio skills to locate the patient, identify and classify the medical situation, employ and coordinate appropriate resources, and provide critical first aid instruction while mediating the caller's stress and trauma (Queensland Ambulance Service, 2012). It has been suggested that the pressures associated with this role may induce high stress levels equal to those of "on the scene" emergency workers (Jenkins, 1997); however, there is little research on EMDs' health and well-being.

Research on telehealth workers has predominantly focused on communication difficulties and how the subsequent stress relating to these difficulties may directly affect patient outcomes (e.g., Rothwell, Ellington, Planalp, & Crouch, 2011). Telehealth workers can become auditory witnesses to others experiencing direct or indirect trauma-related stress; however, there is very little research to date examining personal impacts this may incur. The witnessing of trauma or repeated exposure to others' trauma has been more commonly referred to in the literature as vicarious trauma, which differentiates the position of the person from the stressor (McCann & Pearlman, 1990). The *Diagnostic and Statistical Manual of Mental Disorders* (5th edition; American Psychiatric Association [APA], 2013) refers to the witnessing of others' trauma as a potential criterion for posttraumatic stress disorder (PTSD)—for example, a traumatic event happening to others (in person), learning of a traumatic event occurring to a close family member or friend, or repeated and extreme indirect exposure to adverse details of trauma (APA, 2013). Emergency service workers (ESWs) "on the scene" can potentially be subjected to both direct and vicarious trauma; however, as EMDs are physically distanced from these threats, it could be hypothesized that they are more likely to be affected by the latter criterion through auditory witnessing.

Although there is little research on the personal impacts of operational stress on telecommunications emergency workers, there is related literature regarding the well-being of on the scene emergency workers. Generally, such research asserts that these individuals are potentially more susceptible to higher risks of burnout and PTSD than the general population through their regular exposure to potentially traumatic events (e.g., Alexander & Klein, 2001; Kirby, Shakespeare-Finch, & Palk, 2011). ESWs may experience trauma directly or vicariously as well as general stress (e.g., contending with operational risks to personal safety, heavy workloads, and overtime and shift

work), which can negatively impact on both their professional and personal lives (Archer, Williams, Sofianopoulos, & Thompson, 2011; Regehr, 2005). Organizational stressors can also contribute to health outcomes due to factors such as perceptions of a lack of value and lack of control within their work (Mahony, 2001). Despite these stresses, many ESWs find their role rewarding, and they are able to learn to deal with these more stressful and traumatic aspects of their job, seemingly taking them in stride (Regehr, Goldberg, & Hughes, 2002).

In addition to knowledge of potential harm that can occur in the ESW role, there is also research providing personal narratives of growth from vicarious trauma. Posttraumatic growth describes positive changes in a person after experiencing trauma, where previous beliefs are challenged and cognitions of rumination and self-disclosure are used to engage in growth processes (Lindstrom, Cann, Calhoun, & Tedeschi, 2011). Positive changes can occur in the domains of self-perception, interpersonal relationships, and philosophies of life (Tedeschi & Calhoun, 1996). Research with paramedics has shown that in addition to encountering difficulties from occupational stress and trauma in emergency work, these experiences can also become a catalyst for positive change and growth (e.g., Kirby et al., 2011). Research with firefighters found that particular coping strategies (self-care), support, and respect from the organization were significant predictors of posttraumatic growth (PTG) (Armstrong, Shakespeare-Finch, & Shochet, 2014). This research with ESWs highlights that PTG is a possible outcome and one that may be related to a variety of organizational or individual factors. To date, no research of which we are aware has assessed posttraumatic growth within the EMD population.

Current literature on EMDs has hypothesized that organizational and operational elements may be potential sources of stress within this population (Miller, 1995), and data from exploratory health studies also allude to this (e.g., Anshel, Umscheid, & Brinthaupt, 2012). More explicit evidence was identified in Forslund, Kihlgren, and Kihlgren's (2004) qualitative research with 16 Swedish EMDs. This research provided detailed insights into operational difficulties and identified that stress was experienced through uncertainty, communication difficulties, and strains on internal and external resources. Using a phenomenological-hermeneutic approach to analyze the meanings of this data, Forslund et al. concluded that uncertainty and unpredictability are potentially major contributors to stress with this population. Weibel, Gabrion, Aussedate, and Kreutz's (2003) preliminary research on EMDs' health identified increases in the stress hormone cortisol among those on the job (compared to those off duty), indicating that work-related stress may negatively affect EMDs' health and well-being. Jenkins's (1997) research on EMDs working through Hurricane Andrew measured psychometric levels of stress that were considered comparable to emergency workers on the scene. Despite the significance of Jenkins's findings, it could not be

distinguished if this distress was through the EMDs' experiences as primary victims, helpers, or community members.

The findings of the current body of research on EMDs elucidate that there are significant stressors associated with the EMD role; however, there is a lack of information about how these personnel experience this role and manage and cope with the associated challenges. Therefore, the goal of this research was to use a rigorous qualitative design to investigate the lived experiences of EMDs in order to further understand their experiences and to provide information on how best to promote mental health and well-being in this population, with a view to identifying factors that may mediate the demands of this important work.

METHOD

Methodological Approach

Due to the scarcity of EMD research, a qualitative approach using a semistructured interview format was utilized. Qualitative research within health studies enables exploration of complex phenomena that cannot yet be reduced to a range of variables (Landridge, 2007). The use of semistructured interviews in the form of a short series of open-ended questions was designed to initiate the conversation and then allow participants to direct the flow of their responses into areas they considered most pertinent. Interpretative phenomenological analysis (IPA) was used to analyze our data. IPA allows the researcher to capture an authentic insight into the unique contextual experiences of the participants with limited preconceived ideas regarding the variables at play. IPA was also chosen for its ability to encompass an ideographic study, using a "bottom up" rather than "top down" approach to capture new data and explore meanings as well as balance findings relating to both the individual and the shared account of a group (Reid, Flowers, & Larkin, 2005).

Setting and Participants

For the current research, EMDs were recruited via e-mail within one statewide service from city and country regions to represent three different communications centers (120 EMDs). Of the 35 EMDs who volunteered, a random selection were approached for an interview. Patterns and conceptual relationships from the collected data were found to stabilize after nine interviews, thereby achieving theoretical saturation (Landridge, 2007). Additional participants were then strategically targeted by region, age, and gender to enable a representative sample of the EMD population and ensure that information did not differ as a function of these demographic variables. The final sample size was 16, and the age range was 24–57 years ($M = 41$, $SD = 10.24$); gender ratios were reflective of regional figures (Spence, 2012). Six participants were male,

and 10 were female. Time in the EMD work role ranged from 2–15 years ($M = 7$, $SD = 4.67$), with a range of auxiliary EMD roles such as supervisors, team leaders, trainers, and peer supporters also represented. Two participants had paramedic backgrounds. Fourteen worked full-time and two part-time. Fourteen participants self-identified as Caucasian-Australian.

Data Collection

Interviews were conducted by the first author within private offices in two regions ($n = 10$), via phone ($n = 4$), and via Skype ($n = 2$). To ensure confidentiality of dialogues, participant transcripts were assigned a sequential number system according to gender (e.g., Participant 1, female). As this EMD population was relatively small (120 in total), additional participant data were not included with the quotations used as this could potentially identify participants. Interviews commenced with the question "When you first applied for the role of EMD, what did you anticipate this role would be like?" Questioning then followed an open-ended format to follow the lead and direction of the participants' narrative to detail their experiences as an EMD over the course of their career. Interviews were recorded and then transcribed verbatim to maintain the integrity of the data.

Analysis

The initial analysis was conducted at a case level to determine individual emergent themes; then patterns and connections were explored, clarified, and emphasized as a collective group (Smith, Flowers, & Larkin, 2009). The interpretative component of IPA allows the researcher to speculate on the data and to identify and summarize what the data mean to the participants (Reid et al., 2005). Data were reviewed for individual meanings, which are illustrated with quotes. Individual summary tables were constructed, illustrating the meanings identified for each participant. These meanings were then collated across participants to identify significant subthemes of the data. Next, patterns were identified from the subthemes, which allowed for identification of constituent themes. Constituent themes were then extracted, structured, and formed into a master summary table that allowed for identification of overarching superordinate themes. Themes were also constructed into graphical tables and visually examined against the potential variables of participant age, time in role, and gender, with no prominent clusters or correlations observed. The data were rechecked and the analysis corroborated with an independent rater to produce a comprehensive and psychologically informed description. No significant or identifiable differences resulting from participant age, time in role, or gender were noted with the data. As the analysis is interpretative, results are expanded

through quotes to provide the reader with example data. This allows transparency of the analysis in order to assess its plausibility (Reid et al., 2005).

RESULTS

Three superordinate themes emerged from the data: (a) operational stress and vicarious trauma, (b) organizational stress, and (c) posttraumatic growth. The superordinate themes comprised 14 constituent themes derived from clustering subthemes. Figure 1 provides a hierarchical visual depiction of the three levels of themes.

Operational Stress and Vicarious Trauma

ADJUSTMENT TO ROLE

While stress and vicarious traumatization can occur any time, the first 1–2 years was detailed as the most pivotal period of adjustment, and a "make or break" period as EMDs adapt to the complexities of the work role. The proximity of the role to the life and death and emotional reactivity of callers in trauma is also challenging; for example, "it's one of the only places I've heard some of the tones of voices and the panic in people's voices, that sort of stuff" (Participant 12, male). The complexity of the role was described as a steep learning curve with feelings of being overwhelmed, having intrusive thoughts, and ruminating as they adjusted to the role. For example, "[after work] your brain would start replaying in your head, calls you've had in the day, and could I have done this differently, especially if it's a severe one. 'What ifs' really do hinder you" (Participant 1, female).

CALLS

The relentless exposure to incoming calls and the complex nature of many of these calls were expressed as significant stressors. Complexity relates to ambiguity with information, multifaceted medical needs, rescue in remote locations, and communication difficulties. EMDs also expressed how they are frequently abused and witness a "darker side" of life—assaults, murder, mental health problems, and substance use. To address the complexities of assessment without visual and physical connection to the caller in crisis, EMDs described how they use visualization to bridge this gap. "Because you're doing everything in front of a desk really, the only way you can really get a sense of what's going on is to imagine it" (Participant 14, male). Several EMDs reported lasting memories of graphic details and residual memories of callers' emotions: "We focus on what they're saying, what they're telling us, umm, the surrounds that we hear on the phone, the pictures they paint to us on the phone is our focus and sometimes that can be a bad thing" (Participant 10, female).
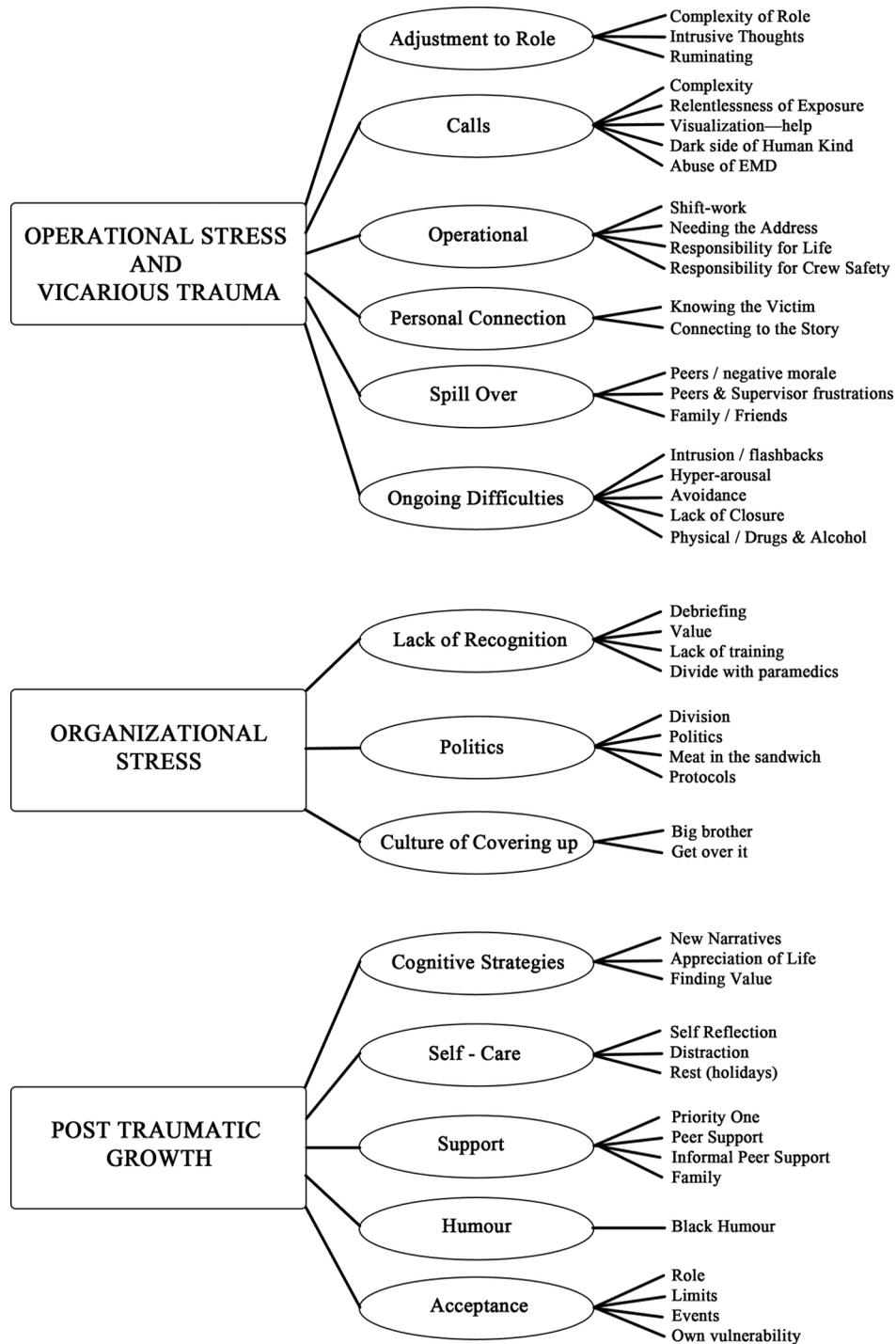
FIGURE 1 Results of interpretative phenomenological analysis of emergency medical dispatchers. Left to right: superordinate themes, constituent themes, and subthemes.

EMDs described how they seek to bring control and clarity by taking control of callers to use them as a conduit, coaching them to follow their instructions for applying aid: "The cord was around her [baby's] neck when she was born, and talking to the father he was like 'I'm not doing it' and I'm like 'Well no one else is doing it, get down there' . . . and it was just perfect" (Participant 5, female). However, seeking to use the caller does not always end positively. An example is a mother who was too terrified to follow the EMD's instructions to go back into her house and perform first aid to save her choking child. The EMD described using his "dad's" voice when all else had failed: [mother] "I can't, I'm too scared." [EMD] "Do you know what? You're just going to have to do it, you're this patient's mother." . . . Before I knew it, she's in the car with the child, driving to the local hospital and I'm going "Stop! You need to pull over so I can give you instructions." [mother] "I don't think I can." [EMD] "You have to." "And then the phone went dead." . . . I probably have more internal turmoil because I couldn't give that person the best possible instructions that I know I could because that person wouldn't listen to me. My job is to make someone listen to me" (Participant 2, male).

OPERATIONAL

EMDs expressed how they combat the physical effects of stress and fatigue through shift work, which can affect both their health and social life. Daily operational stress was experienced through EMDs' perceptions of being responsible for the lives of others, combined with an acute awareness that any call could be evaluated for quality control. Vigilance to take care of the safety of both the client and the paramedic crews was described as a constant psychological weight that is part of their role: "The stress of ambulance is . . . I need to do the best I can to save this person before the ambulance gets there, so you are in charge of someone's life" (Participant 10, female).

PERSONAL CONNECTION

EMDs may form emotionally intimate connections with callers as they support them during their time of crisis. Several EMDs described how connecting with the caller's story through their own personal experiences or knowing the caller or patient increased their level of stress and traumatization, as depicted in Participant 5's (female) experience of working in the communications room when a family friend died: "It was horrible, one of the most traumatic things in my career."

SPILLOVER

Stress carried over from the pressure and trauma exposure associated with this role was found at times to spill over into the workplace, which fostered

negative morale: "Not everyone handles the stresses of the job as well, and I think that when other people can't handle it, I guess it sometimes can get taken out on each other.... Personally I find that's actually more stressful than giving someone CPR and having someone scream and cry" (Participant 1, female). Also: "We have had situations where people will throw their head sets in the air and say 'I've had enough'" (Participant 9, female). The stress relating to the EMD role was also found to spill over into their personal life: "When I don't have enough resources and things don't go perfectly I tend to get very stressed, very anxious, and I get insomnia" (Participant 16, female).

ONGOING DIFFICULTIES

Ongoing difficulties with stress related to the role and specific calls were evident in a variety of ways consistent with PTSD symptoms. Ongoing difficulties were expressed as feelings of powerlessness, failure to save lives, or failure to control situations, which were experienced through ongoing nightmares, insomnia, drug and alcohol use, shutting down emotionally, numbness, hyperarousal, and isolation. Specific calls where EMDs were an auditory witness to callers' intensive emotions, crisis details, and critical and chaotic crisis situations were described as sometimes imprinting into their memories. Some EMDs sought psychological and peer support, while others reported ongoing symptoms such as hypervigilance from a lack of closure of previous traumatic events. For example: "You're just waiting for [another natural disaster] to happen, which is not a good way to be. 'Cause no one has had any closure" (Participant 10, female). Sometimes the negative impacts of their work role are noticed by significant others:

> When I come home, I have to turn that back on again [emotion]. . . . I have to be a whole person, not just a calm person in the middle of a storm doing the best I can. It doesn't always come back I guess; this empathetic feeling person doesn't always reappear, and other people in my life have said that I'm [now] very cold and disconnected. (Participant 14, male)

This is also noticed through self-awareness of physical signs. For example: "If I go to put on my uniform and start to do these ones [shows hand shaking] and I think yeah, no, that's not a good idea [to go to work]" (Participant 6, female).

Organizational Stress

LACK OF RECOGNITION

All EMDs in this sample depicted stress directly relating to organizational procedures through protocols and policies, and many perceived they lacked

value within the organization. While EMDs expressed an understanding and acceptance of the need for protocols and auditing, they also described how they rarely receive positive feedback: "You just don't get feedback unless you do something wrong" (Participant 15, male). A perception of exclusion from training, promotions, debriefings, rewards, and ceremonies available readily to other ESWs was found to foster beliefs that the EMD role is seen as less significant by the organization than other emergency workers. This is explicated by EMDs' perceived exclusion from support and ceremonies after a large natural disaster: "I think that [lack of support after the disaster] really cemented for me that we weren't considered important by the powers that be" (Participant 6, female). Also: "I was very proud of it when I heard about it [being awarded a medal], and I thought this recognition is fantastic, umm, but the way it was handed out [across a desk rather than at the ceremony with paramedics] was just disrespectful... it means nothing now" (Participant 10, female).

In contrast, being included in debriefings was seen as a portrayal of their value and importance within the emergency organization. Attending debriefings (when invited) was found to assist EMDs with processing highly traumatic events by providing them with an avenue to discuss their concerns and with psychological closure and value: "I felt it was good to air out our frustrations; we could just air and talk about anything....I felt personally myself that we were heard. But yeah, I felt valued" (Participant 8, male).

POLITICS

EMDs reported that a divide between them and on the scene staff is fostered through organizational procedures where the EMD's role can be to enforce unpopular management rules and regulations to paramedics through their daily radio communications and dispatch procedures. They proposed that this divide is due to paramedics not being privy to the true gamut and pressures of the EMD role in the emergency worker chain: "I think people just need to be treated like professionals. Paramedics think we just take calls, they have no idea" (Participant 13, male). EMDs reported that the combined negative feedback systems from management and paramedics can contribute to perceptions of segregation within the organization: "Paramedics, umm, aren't very thankful of us...they see us as their punching bags...so you don't get a lot of support [from them]" (Participant 13, male).

While stress pertaining to the EMD and paramedic divide was reported at all stations interviewed, one station reflected on a recent positive change between these two roles, fostered through paramedics' understanding of the role EMDs play in the emergency chain: "I feel that we get the respect up here; there has historically been a 'them and us' between paramedics and us, but I think they understand...the complexities of our job now" (Participant 8, male). This positive change also provided EMDs with a perception

that they had greater access to paramedics for information that brought forth closure on cases, as well as a perception of value for their contribution to the emergency worker team: "We have that rapport [with paramedics] and we can ring them to ask about how was that job and how a job ended up. Especially for nasty jobs, so we've got that closure and they're able to move on" (Participant 9, female).

CULTURE OF COVERING UP

EMDs described their experience in this role as a "big brother" environment where they are directly answerable for every decision they make: "Everything's taped, every key stroke is recorded . . . and that in itself is very, umm, stressful for a person" (Participant 10, female). Errors are subject to disciplinary consequences and potential litigation, and a perceived organizational culture of covering up was found to sometimes prohibit EMDs from asking for help with job-related uncertainties, needs for assistance, and stress. This perceived organizational culture can form barriers to help-seeking behaviors: "They think that it shows they're weak and that they're not handling the job" (Participant 5, female). An implicit workplace culture where EMDs are expected to "get over it" was perceived by some participants through behaviors of senior management. For example, after a severe natural disaster, "They [management] just wanted to put it away. I don't think they really realized the impact it had on people" (Participant 10, female).

Posttraumatic Growth

COGNITIVE STRATEGIES

Participants reported that their daily work exposed them to others' trauma, which acted to increase their awareness of the fragility of life, challenging previous beliefs they had of the world. Adjustment to the role was narrated as being a catalyst to engage in processes such as effortful rumination and self-disclosure leading to growth. To cope with daily calls from people experiencing trauma and crisis, participants described how they used cognitive reappraisals to construct new narratives that hold meaning to them and assist them to make sense of their emotions, their role, and their relationship with the caller. Growth manifested in a number of ways, including a new and increased appreciation and value of their own lives and subsequent changes in behavior to embrace these new values. For example: "Seeing what can happen in an instant, literally in an instant, I now travel quite a bit, [laughter] sorry kids the inheritance is gone! It just makes you realize how short a life can be, and to just make the most of it while you have it, while you have your health and are able to do things as well" (Participant 7, female).

SELF-CARE

New narratives formulated to assist with adapting to the role were strength-ened and maintained through using strategies of self-care, support, humor, and self-reflection. This is depicted by Participant 2 (male) processing a new narrative for the previously quoted fatality of a child choking:

> I couldn't help [the patient survive] with the best of my training, but you know for me I process it through my emotions, that that poor child [may have] helped other people along [through organ donation]. And that's how I have been able to deal with it . . . and maybe I'm looking for some-thing nice, maybe I need to see something nice, you know of what was a really, really sucky situation.

Many EMDs articulated their ability to construct new narratives that influence their behaviors and enhance well-being through self-care strategies to counteract the stresses of the job: "I do a lot of meditation. I will release it and let it flow away and I have this very matter of fact approach. It took a while to develop it, but if I can't change it or have a direct impact on it, I don't worry about it" (Participant 1, female). Self-care was also evident through the use of distraction techniques, and holidays were used as a reward providing rest and respite from work: "On your days off you try and do things that are really nice, like go to dinner somewhere really nice, like go on a day trip, so you use your days off in a way to reward yourself for what you've just done for the past 4 days" (Participant 6, female).

SUPPORT

While support was highlighted as an important aspect of their own ability to cope with the ongoing stress of the work, EMDs described using informal peer supports and family and friends: "I get frustrated when things don't go right but, umm, my best way is talking to my peers . . . once I've verbalized my frustrations I'm okay" (Participant 9, female). Also: "My husband's good to talk to because he's a paramedic . . . he can kind of relate" (Participant 4, female). Connections with others who share this unique trauma work were found to provide a semblance of normalcy to their experiences and to help them process their emotions: "When you talk to other people about it, you've shared with someone. You've heard what they think, they've heard what you think . . . lightening the load" (Participant 8, male).

HUMOR

Black humor was another aspect shared by peers to provide a collective camaraderie and a distraction technique to break negative cognitive fixations such as shock when witnessing trauma. For example, Participant 1 (female)

said "I think that's shared amongst the ambulance service, that dark humor, and it helps I guess to defuse situations."

ACCEPTANCE

EMDs described how self-reflection processes can serve to identify their own vulnerability with their role and enable a deeper understanding and acceptance of these facets; for example, "if you allowed all the trauma and emotion to get in, it would slowly get to you because every call has the ability to upset you" (Participant 2, male). Self-reflection also provided participants with individual narratives that they used to accept the limits of their role. Participant 8 (male) said, "We're doing the best we can and in many instances there won't be a good outcome. And I probably process that; that good or bad outcome—we've done what we can." Finding acceptance of the multitude of trauma and death they encounter was expressed as a difficult but essential process. For example: "You get your kiddies drowning in the pool, which always get[s] to you, or your SIDS deaths, but you come to the realization that this is the industry I'm in, people are going to die. And babies get born" (Participant 13, male).

DISCUSSION

Our data indicated that substantial stress for EMDs was produced through both operational pressures and vicarious trauma. Negative impacts of organizational stress were seen as relating to policies, protocols, and experiences of a predominately negative feedback system from management, which can be further exacerbated through a perceived hierarchical division between paramedics and EMDs. This study also found that work-related trauma can become a catalyst for EMDs to experience posttraumatic growth.

Operational Stress and Vicarious Trauma

Analogous with the "on the scene" emergency worker literature (e.g., Regehr et al., 2002), this research found that empathetic engagement, personal connections with the story and/or knowing the caller, can induce vicarious trauma for EMDs through an emotional provocation. As detailed by McCann and Pearlman (1990), vicarious trauma depicted in this sample was experienced through subsequent cognitive, emotional, and physical strains with ongoing difficulties and the spillover of stress into workplace and family life. Symptoms were experienced as intrusions, flashbacks, hyperarousal, avoidance, and physical signs of stress. Most EMDs reported that these symptoms eventually dissipated, but several expressed these as ongoing difficulties. EMDs' mental health was impacted by operational stressors of shift-work

fatigue, responsibility for callers' lives and crew safety, protocol adherence, and the lack of closure they receive regarding caller/patient outcomes.

Communication difficulties have been found to be one of the more stress-invoking operational aspects of this work (Forslund et al., 2004), and in this research EMDs described how they use visualization to bridge this gap. However, visualizing victims' descriptions of crisis can assimilate sensory systems to produce lasting memories where intrusive thoughts can follow (Pearlman & Saakvitine, 1995). EMDs described how they used the caller as a tool to access essential operational needs for patient information, as their conduit to apply their first aid and safety instructions. To gain control of the caller, EMDs described how they bridge physical gaps by engaging in creative thought processes and form emotional connections to meet both the individual needs of the caller and their operational needs for information. This allows them to advocate for the health and safety of both the patient and the caller. However, once the paramedics arrive at the scene, this empathetic engagement must be instantly disconnected, as the EMD then needs to move on to answer the next incoming call, often never privy to knowing how each crisis ends. These facets of using visualization to address remote communication difficulties, the use of a third party for aid, and a lack of closure of cases were found to distinctly differentiate this group from other emergency workers. Narratives from this study detailed residual stress and heightened emotional responses after encountering experiences when a caller refused to help or was too emotive to help and the patient subsequently did not survive. These findings highlight that in addition to professional pressure EMDs have with being responsible for the lives of others, there is also a personal element of belief that they need to contain the crisis.

Organizational Stress

While organizational procedures and protocols are an important requisite to protect the patient, the worker, and the organization, the enforcement of frequent auditing of telemedicine calls has the potential to create a predominately negative feedback system from the organization toward the telecommunications worker. When negative feedback is not counterbalanced by positive feedback, it can create perceptions of a dictatorial and uncaring workplace culture. Stress and hostilities from paramedics toward EMDs have been identified in previous ESW studies (e.g., Alexander & Klein, 2001). The current research identified how experiences of negative interactions from both paramedics and upper management can stimulate and uphold perceptions of EMDs that they are essentially undervalued by the organization as a whole, which subsequently increases the stress for those in this work role.

Organizational research illustrates how workplace well-being can be moderated by a number of fundamental elements, including demands in the workplace, levels of perceived control, support by the organization,

relationships with others, and clarity with one's role in the organization (Weinberg & Cooper, 2012). The findings from this study indicate that although EMDs foster their own sense of self-worth for their work, organizational membership was negatively affected through perceptions of insufficient positive feedback and the absence of team cohesiveness between emergency worker roles. Validation of the EMDs' contribution within this role was found to be a significant moderator of their stress and well-being. For example, EMDs who had been invited to attend operational debriefings perceived this as management validating and acknowledging the importance of their role in the organization. These debriefings were found to provide them with an avenue to process psychological trauma associated with the crisis. However, if a participant had been excluded from such forums, organization activated psychological support after traumatic events, promotions, rewards, and ceremonies, this contributed to a sense of decreased value by the organization.

While a comprehensive staff support program was available for all emergency service workers, the overall narrative in this study reflected that EMDs perceived that their trauma is not considered equal to that of the paramedics, and thus they had largely decided not to seek out and use support services unless they experienced extreme trauma to the point they could not function on the job. Voicing and identifying feelings are known to assist with managing operational stress (Halpern, Maunder, Schwarts, & Gurevich, 2012). EMDs in this sample instead often sought unofficial debriefings with colleagues or families to fulfill their need to process their stress; however, this highlights a potential risk of bringing trauma home to family members, who can then also be subjected to vicarious trauma (Regehr, 2005).

Posttraumatic Growth

Despite the detailed depictions of daily stresses experienced by EMDs, there were also descriptions of increased psychological functioning in this sample. Lindstrom et al. (2011) propose that posttraumatic growth can only be present if previously held beliefs are challenged, providing the catalyst necessary to engage in processes such as rumination and self-disclosure. The EMDs in this study cited adjustment to the role as a catalytic period, with experiences of vicarious trauma described as a sequence of rumination and intrusive thoughts that were processed through the use of self-disclosure and self-reflections. These processes enabled new narratives to be formed, which assisted them to make sense of the unique world of trauma they experience, enhancing their awareness of the fragility of life and limits of good health. Hence, EMDs spoke of an increased sense of value for life and for their friends and family connections to be more richly embedded in their lives. These findings are consistent with Tedeschi and Calhoun's (1996) model of PTG, where alterations in self-perception, interpersonal relationships, and a changed philosophy of life are perceived as being beneficial to the individual.

Limitations and Recommendations

Although this research involved a balanced representation of participants for this population, the results may not be generalizable to all EMD roles due to individual and group variability, cultural influences, and operational and organizational procedures. Future research utilizing a more structured design may seek to define potential variables and their influences on stress and well-being. Our results identified EMDs' susceptibility to vicarious traumatization and detailed a range of PTSD and trauma-related symptoms; however, it was outside the scope of this research to diagnose PTSD. This vulnerability to trauma, though, can be highlighted to medical and emergency organizations that use telecommunications services to ensure that procedures and services are put in place to address this problem. Although employee assistance and stress management programs have the capability to assist with vicarious traumatization, how an organization portrays its attitudes toward these programs can be influential to their success (Weinberg & Cooper, 2012). The significance workers place on organizational attitudes toward their health and well-being should not be underrated, as this study identified that perceptions of a negative workplace culture toward EMDs can foster barriers to workplace support programs in addition to increasing stress and reducing well-being. The organization may make provisions for paramedics to observe the EMD communications room over several days to foster knowledge and understanding that may break down perceived barriers of value and division. The majority of EMDs cited considerable respect for paramedics and the work they do; if this could be reciprocated, it might effectively reduce workplace divides and encourage the sharing of information.

Conclusion

The aim of this study was to provide an empirical understanding of the lived experiences of EMDs and examine ways in which this telemedicine role may impact on mental health and well-being. Despite a lack of physical and visual connections with the patient, results support that this role creates a platform of continuous and close proximity to others' trauma through auditory and emotional connections and that those in this role are susceptible to vicarious traumatization. While any call has the potential to become a traumatic experience, when EMDs lose control of the caller in the crisis, have a personal connection with the caller's story, or do not feel supported by the organization, traumatic reactions can be heightened and traumatic symptoms prolonged. This study also found that the vicarious trauma associated with this role can be a catalyst for positive change, with EMDs reporting posttraumatic growth. The EMDs in this sample described how they often form new narratives to enable them to cope both personally and professionally with daily

calls from people in crisis, which are strengthened and maintained through the use of support, humor, and acceptance. Experiences in the role can act as a catalyst for a reevaluation of life, the priorities and philosophies they have in life, and an appreciation for their relationships. This research also reported the first findings of PTG in this population. Organizational practices may hold the potential to increase the well-being of EMDs by fostering a culture of workplace inclusion, providing recognition and explicit valuing of those in the EMD role, and by ensuring that EMDs feel supported.

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