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Chapter 5

***“If you let it get to you...”*: Moral Distress, Ego-Depletion, and Mental Health Among Military Health Care Providers in Deployed Service**

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Introduction

Health care providers (HCPs) are routinely placed into morally challenging situations that have the potential to cause moral distress. This is especially true for HCPs working in the military, whether they are on deployment outside their typical contexts of practice such as in disaster relief (e.g., Haiti and the Ebola missions in West Africa), or in more typically military settings such as peace keeping or armed conflicts (e.g., Afghanistan, Syria). Moral distress refers to “painful feelings and/or psychological disequilibrium” (Nilsson, Sjöberg, Kallenberg, & Larsson, 2011, p. 50) that occur when an individual is aware of a morally appropriate action in a moral dilemma but obstruction prevents them from carrying it out, or when in a situation where they must choose between upholding equally treasured but conflicting moral values. Similarly, moral distress can occur when faced with a ‘tragic choice’ where all available courses of action require something of moral significance to be given up, such as surgical triage in a mass casualty event (Hunt, Sinding, & Schwartz, 2012). In the literature, moral distress has been connected to negative psychological effects and even stress related mental health issues including compassion fatigue, burnout, and post-traumatic stress disorder (Owen & Wanzer, 2014; Gustafsson, Eriksson, Strandberg, & Norberg, 2010; Litz, et al., 2009).

The most recent model of moral distress in military HCPs was created by Bradshaw and colleagues, who argue that the result of the cumulative effects of moral distress could lead to a crisis state for military HCP where they are no longer able to cope and maintain normal functioning (Bradshaw, Brajtman, Cragg, & Higuchi, 2010). Based on theories of stress in psychology, they propose the incorporation of a feedback loop to

describe the observed cumulative effects of unresolved moral distress. The psychological mechanism underpinning this feedback loop and driving the cumulative progression of moral distress has been undiscussed in the literature. This paper will describe military HCPs' experiences with the moral distress process and assess the potential use of 'ego-depletion' as a psychological mechanism and conceptual framework for its cumulative progression. Since ego-depletion is caused by the over-taxing of limited self-regulation resources, the demands placed on these resources throughout the experience of moral distress is relevant here. If HCPs are unable to achieve satisfactory resolution, moral distress (especially when experienced chronically) can be associated with heightened personal-resource demands, and continued ego-depletion which creates a cycle toward mental health problems (Gao et al., 2014; Rivkin, Diestel, & Schmidt, 2015). The personal effects of this depletion can include depression, burnout and further difficulties the result of which are breakdowns in relationships, higher need for health care resources, and potentially loss of employment (Rivkin, Diestel, & Schmidt, 2015; Owen & Wanzer, 2014; Jones et al., 2008; McCarthy & Deady, 2008). For the military, this can have significant effects on personnel and resource management.

Methods

This paper is based on data collected by the Ethics in Military Medicine Research Group (EMMRG) in a Canadian Institutes of Health Research funded study examining the ethical challenges of military health care professionals during peacekeeping or disaster response missions, and exploring both their role with patients and their role within the mission, and how are ethical tensions were addressed (www.emmrg.ca; Williams-Jones, de Laa, Rochon, Okhowat, Schwartz, & Horning, 2015). This study follows on research by Schwartz, Hunt et al that examined ethical challenges experienced by HCPs working in the context of humanitarian assistance and development work (Williams-Jones, et al. 2015; Schwartz, et al., 2010). Here we use the data to help understand how moral distress is experienced in distinctive ways in the military HCP population, and to represent this process by applying psychological theory to the research findings.

We used purposive sampling to identify potential participants from all types of health professions, with a variety of experiences, and who had spent at least 6 months between 2005-2010 working on medical missions in an international context with the Canadian Armed Forces (CAF). The qualitative analysis consists of 27 interviews of male and

female non-civilian HCP in the CAF, including nurses, physicians, assistants, medical technicians, and physiotherapists. Recruitment occurred in three stages: 1) invitations were mailed in English and French and 350 HCPs were given individual invitations to participate along with a letter of support from the Deputy Surgeon General; 2) snowball recruitment; 3) and contact through the research team via the EMMRG website as well as through advisory board members. Interviews using open-ended questions were conducted. The interview guide was created with the intent of prompting participants to discuss different aspects of their personal ethical experiences in the deployed context.

The first step of the analysis involved descriptive coding of EMMRG participant interviews and conducting a combined inductive and deductive approach to analysis (Miles & Huberman, 1994). The second step, described here, involved analysing EMMRG participant experiences through the lens of Bradshaw and colleagues’ model using deductive coding and decision modeling and finally outlining emerging themes that challenged aspects of the model.

Bradshaw and colleagues’ model was used as a lens to better understand the experience of moral distress in EMMRG participants’ interviews and was selected as it is the most recent and fully developed model for military nurses, includes conceptualization of a resolution process, and incorporates findings from psychology including aspects of stress models. A secondary set of deductive codes were created that reflected Bradshaw and colleagues’ model and its associated steps was combined with the general findings, and descriptive qualitative analysis was then used to develop themes relevant to the phenomenon of moral distress in military HCP.

Approach of Analysis
1. Interviews conducted, anonymized, transcribed
2. Primary deductive coding hierarchy based on interview guide
3. Inductive incorporation of emerging themes into primary coding hierarchy
4. Secondary deductive coding hierarchy based on Bradshaw and colleagues’ model
5. Inductive incorporation of emerging themes relevant to moral distress from primary coding hierarchy into secondary coding hierarchy
6. Descriptive qualitative analysis of secondary coding hierarchy

The type of ‘low-inference’ interpretation in descriptive qualitative analysis captures the individual’s meaning regarding their personal experiences with the phenomenon of

moral distress (Sandelowski, 2000). This approach requires that the researcher interpret the language used by participants as a ‘vehicle of communication’ to convey the facts of military HCPs’ experiences with moral distress and the meaning that they associate to these facts (Sandelowski, 2000). The study was reviewed and approved by research ethics committees at the University of Montreal, McMaster University and the Department of National Defence/CAF.

Background

Moral Challenges for Deployed Military Health Care Providers

Military service members frequently confront moral dilemmas during war (Gibbons, Shafer, Hickling, & Ramsey, 2013; Litz et al., 2009). For a military HCP, the dual role of healer and service member adds another dimension of moral complexity to practicing in the deployed environment (Gibbons et al., 2013). While military HCPs have a duty to care for their patients, they may encounter situations when the military mission is seen as primary and prioritized over patient needs, putting “health care providers in ethically compromising situations that leave lasting impressions” (Gibbons et al., 2013). The challenge of balancing military and professional moral values increases the likelihood of military HCPs encountering moral dilemmas (Gibbons et al., 2013). Fry and colleagues (2002) argue that military nurses work in diagnosis and treatment settings that are atypical and stressful. Stewart (2009) reports that military health care teams in the deployed environment regularly encounter horrific traumatic injuries and deaths, with 69% of cases involving polytrauma (Owen & Wanzer, 2014). A UK study examining military medical personnel found that providing care to combat trauma cases, witnessing soldiers being wounded or killed, and handling dead bodies was associated with psychological distress in medical personnel (Jones et al., 2008). Other sources of stress for military HCPs include separation from family and support systems, 24/7 availability, exposure to personal danger, friends and coworkers being injured or killed, and potentially being involved in killing (Adler & Castro, 2013; Jones et al., 2008).

Frequent moral challenges as well as highly stressful and complex patient care situations in the deployed environment present heightened risks for military HCPs to encounter both psychological and moral distress. Some research has been conducted on the impact of moral challenges on military HCPs’ mental health, with Jones and colleagues (2008) suggesting that moral stressors contribute to the high levels of stress-

related mental health problems in this population (Litz et al., 2009; Gibbons et al., 2013; Vargas, Hanson, Kraus, Drescher, & Foy, 2013; Dombo, Gray, & Earl, 2013). While there is limited research available, the concepts of both moral distress and, more recently, moral injury have been examined in military HCPs encountering moral dilemmas in the field (Fry, Harvey, Hurley, & Foley, 2002; Bradshaw et al., 2010; Gibbons et al., 2013).

Moral Distress Experience for Deployed Military HCPs

When military HCPs encounter a moral dilemma, they choose a course of action to pursue, that is, they make a ‘moral action choice’ (MAC) (Bradshaw et al., 2010). This process involves awareness of the situation as conflicting with one’s personal moral values, followed by an appraisal of the situation, and a moral judgement deciding on the best course of action given the context (Fry et al., 2002; Bradshaw et al., 2010). However, this process is lived out in frequently rushed and messy contexts and may be more reactive at the individual level. Furthermore, contextual factors in the deployed environment sometimes create barriers that prevent HCPs from enacting a desired MAC, forcing them to choose between upholding equally treasured moral values, or presenting them with a tragic choice, leading to the experience of moral distress (Nilsson et al., 2011; Hunt, Sinding, & Schwartz, 2011).

Moral Distress, Moral Injury, and Psychological Distress

In the literature, the concepts of moral injury and psychological distress are related to moral distress, and contribute to better understanding the experiences of military HCPs. Both moral distress and moral injury reflect conceptually similar experiences; in contrast, though interconnected, psychological distress represents a distinct phenomenon (McCarthy & Deady, 2008). Psychological distress involves one’s emotional reactions to a situation, “but does not necessarily involve violation of core values and duties” (Epstein & Hamric, 2013, p. 331) as is experienced by those with moral distress (Litz et al., 2009). When a challenging situation involves a specifically moral dimension, an individual’s existing moral standards, beliefs, and worldviews (moral schemas) are challenged in a way that is not necessarily experienced during psychological distress (Litz et al., 2009; Harding, 1985). Moral distress often involves psychological distress but also involves emotional and spiritual components that may alter a HCP’s self-identity and beliefs that “the world is benevolent, the world is meaningful, and the self is worthy” (Litz et al., 2009, p. 698). As such, this paper will use ‘psychological distress’ when outlining non-moral emotional reactions, and the term

‘moral distress’ when discussing applicable findings from both the moral distress and moral injury literature.

Moral Distress Experience in the Literature

Jameton makes a distinction between two different types of moral distress: ‘initial distress’ and ‘reactive distress’ (1984). Initial distress is defined as occurring when one first encounters a barrier that prevents a person from acting in the way they believe is moral and is associated with feelings of anger, frustration, and anxiety (McCarthy & Deady, 2008). A blocked MAC represents a ‘trauma that affects the soul’ and violates deeply held moral beliefs, standards, and expectations (Litz et al., 2009; Dombo, Gray, & Earl, 2013). The violation of one’s moral schemas produces inner conflict and dissonance where an individual feels a lack of integration of their thoughts, emotions, and understanding of the world (Litz et al., 2009; Vargas et al., 2013; Dombo, Gray, & Earl, 2013). If unresolved, initial moral distress continues and becomes reactive moral distress, which involves complex negative feelings including powerlessness, shame, and guilt (Fry et al., 2002; McCarthy & Deady, 2008; Litz et al., 2009).

While little research discusses the resolution process of moral distress in military HCPs, some research finds that morally distressed service members exhibit a “psychological imperative to reconcile morally incongruent or discrepant experiences” (Litz et al., 2009, p. 701; Fry et al., 2002). Litz and colleagues (2009) describe resolution as involving cognitive and emotional processing as one self-reflects on a situation and reconstructs more flexible moral schemas that integrates newly learned information, allowing for healing of moral distress through an “appreciation of context and acceptance of the imperfect self” (p. 703). However, the moral distress resolution process can be experienced either positively or negatively depending on a variety of factors such as one’s moral sensitivity, sense of responsibility, and capacity for self-forgiveness (Litz et al., 2009; Bradshaw et al., 2010; Wilkinson, 1987/88).

Findings from both military and civilian HCPs indicate that ongoing reactive and chronically experienced moral distress can lead to progressively more severe consequences. Epstein and Hamric (2009) argue for the incorporation of the related concept of ‘moral residue’ or, “that which each of us carries with us from those times in our lives where in the face of moral distress we have seriously compromised ourselves or allowed ourselves to be compromised” (Webster & Baylis, 2000, p. 217). Adding moral residue into the conceptualization of moral distress can account for its progression toward a downward spiral (Epstein & Hamric, 2009). If moral distress is

not completely resolved, some moral residue persists which depletes the individual's baseline for the next encounter with initial moral distress, creating the downward cumulative progression and potential damage from experiencing continuing or chronic moral distress (Epstein & Hamric, 2009; Corley, 2002; Fry et al., 2002; Webster & Baylis, 2000; Wilkinson, 1987/88). Bradshaw and colleagues (2010) find that the residue of unresolved moral distress creates a feedback loop that eventually places an individual in a crisis state where individuals described a loss of self-control due to, "no longer hav[ing] the resources, both internal and external, to deal with a stressful situation" (p. 72).

Ego-Depletion and Moral Processes

The literature in psychology does not focus on moral distress; however, it offers a useful additional mechanism to consider when discussing cumulative progression of the negative consequences of moral distress. The psychological process of ego-depletion occurs when an individual's limited self-regulation resources that allow them to consciously engage in effortful decision-making and self-control become diminished or exhausted (Baumeister, Gailliot, DeWall, & Oaten, 2006).

Self-regulation

When one encounters challenging and novel situations the application of learned schemas, and automatic responses and behaviours may be insufficient when choosing a course of action (Baumeister, Schmeichel, & Vohs, 2007). If so, the self must engage its executive functions to determine how to act: the conscious cognitive processes responsible for deliberating and making effortful choices as well as the regulation of impulses and need gratification (Hagger, Wood, Stiff, & Chatzisarantis, 2010). The executive functions of both self-regulation and self-control, "refer to the self's capacity to alter its own states and responses" and are necessary to attain control over one's thoughts, emotions, and behaviours (Baumeister & Mick, 2002; Baumeister, Schmeichel, & Vohs, 2007).

All executive functions are dependent on the consumption of the same pool of 'limited resources' that cannot be sustained indefinitely and are akin to the concepts of energy or willpower (Baumeister, Schmeichel, & Vohs, 2007). After efforts involving executive functions, individuals are less effective at successive self-regulatory tasks since these limited resources are vulnerable to deterioration over time from repeated exertions (Hagger et al., 2010). Like a muscle, self-regulation resources can be restored through rest and refraining from self-regulatory tasks as well as through other mechanisms such

as meditation (Baumeister, Schmeichel, & Vohs, 2007). If the self is unable to recover these resources, the self enters ego-depletion, a state of diminished resources that must be restored before normal psychological functioning can continue (Baumeister, Gailliot, DeWall & Oaten, 2006; Baumeister, Vohs, & Tice, 2007). Yet, even in an ego-depleted state it is still possible to engage executive functions when the right motivation is in place; however, this continuous depletion of resources produces ‘severe impairments’ in subsequent self-regulation, leading to extensive ego-depletion as well as potentially burnout and other mental health issues (Baumeister, Vohs, & Tice, 2007, p. 353; Rivkin, Diestel, & Schmidt, 2015).

Moreover, resolving self-conscious moral emotions (such as regret, shame, and guilt) necessitates appraisal of the self and external context which requires use of executive functions, and thus further taxes resources and contribute to ego-depletion (Sheikh & Janoff-Bulman, 2010; Harding, 1985). This appraisal involves a self-regulatory feedback loop as the person evaluates the situation, compares it to their moral standards, and attempts to reduce discrepancies between the perceived self and one’s standards by self-regulating behaviour (Sheikh & Janoff-Bulman, 2010). The person then again compares the outcome of these adjustments to their moral standards and exits the feedback loop when satisfactory resolution is achieved by either meeting moral standards or altering moral schemas through the integration of new information (Sheikh & Janoff-Bulman, 2010; Dombo, Gray, & Earl, 2013).

Since moral distress requires a self-regulatory feedback loop which taxes limited resources, it has the potential to lead to ego-depletion as well as difficulty or an inability to resolve and progress through morally distressing situations. If unresolved or encountered chronically, a vicious circle of over-taxing resources creates a cumulative effect that leads to severe ego-depletion and possibly contributes to the development of mental health problems.

Results

EMMRG participants described encountering morally challenging events where their desired choice of action (MAC) was blocked by a barrier (Bradshaw et al, 2010). The barriers consisted of four emerging sorts: 1. Lack of resources in the context; 2. The exigencies of the triage system, 3. Lack of specialists or specialized knowledge such as where civilian care involved children or palliation, and 4. Social and cultural disparities. Contending with a blocked MAC as well as the resulting initial moral distress involved

psychological processes that increased self-regulation demands. While resolution processes could help alleviate these demands, the additional stressors of the deployed environment requiring self-regulation created challenges that often thwarted self-reflection. If unresolved, initial moral distress progressed to reactive moral distress that involved additional emotional, psychological, and moral complexities as well as compromised self-regulation. If a participant experienced multiple moral dilemmas that caused moral distress, the consequences were compounded and had cumulative effects on self-regulation.

Encountering a Blocked MAC

When first encountering a moral dilemma, the executive function of effortful decision-making is used by individuals who are deliberating on their desired MAC (Sheikh & Janoff-Bulman, 2010). However, when a HCP confronts a barrier to their MAC, they must act in a way contrary to their initial desires. This required participants to suppress or abstain from their MAC and act in another, less desirable way, which involves exercising self-control (Baumeister, Schmeichel, & Vohs, 2007). Participants explained that acting despite a blocked MAC was often painful and led to personal and professional psychological stress. Encountering a moral dilemma that involves a barrier to one's MAC requires that the HCP act in a way that is less ideal and perhaps undesirable, which participants described as requiring self-regulation. EMMRG-22 shared an example of how military HCPs are unable to act in a way they may desire as caregivers because of limitations in the deployed environment. He described his reaction to a situation where he was unable to allocate limited supplies to a patient requiring palliative care because other patients could benefit from the same resources:

"You just feel horrified, you feel, this guy's got a timer on his head counting down as to how much life he has left and you have to tell him 'sorry I can't help you'.

Carry on."

- EMMRG-22

EMMRG-22 shows the difficulty of being confronted with a barrier to one's desired path in a moral dilemma and the necessity of having to act in a way that is less satisfactory. He explained that acting as a military HCP in a time of scarcity sometimes required him to 'carry on' and act in opposition to his initial instincts as a caregiver.

Participants described encountering moral dilemmas that involved a barrier to one's MAC as an experience of psychological difficulty and depletion that often led to professional challenges. EMMRG-11 outlined that her encounters resulted in personal psychological stress and used phrases like *"it's hard"*, *"I find that very difficult"*, and

“it’s very stressful”. EMMRG-07 said her experience with moral distress was one of depletion and exertion, *“You are a cross between feeling weak and exhausted”*. EMMRG-15 explained how barriers to a desired MAC added to the challenges of fulfilling the HCP role, *“It’s hard for you to be the caregiver...it’s crazy, it’s like a constant rollercoaster ride”*. These difficulties were portrayed by EMMRG-11 as intrinsically painful for military HCPs, *“Yeah, everyone was sort of working in their own little private hell I think”*. This psychological stress indicates the need for military HCPs to engage the executive functions of self-regulation and effortful decision-making when struggling to act as best as possible, without falling apart, which denotes taxation of the ego’s limited resources.

Initial Moral Distress

Participants’ blocked MACs lead to emotional upset associated with initial moral distress as well as some compromised abilities to self-regulate emotions and behaviours when reacting to the moral dilemma, suggesting the beginnings of ego-depletion. The negative emotions of anger, frustration, and anxiety were conveyed by participants upon being confronted with a blocked MAC and the resulting initial moral distress. EMMRG participants also described the consequences of initial moral distress as involving intense negative emotions and communicated feelings of disgust and regret for their part in morally distressing events. This indicates that military HCPs identified discrepancies between the actions they felt implicated in and their personal moral standards, inferring the initiation of a self-regulatory feedback loop (Baumeister, Schmeichel, & Vohs, 2007; Sheikh & Janoff-Bulman, 2010).

Participants who had a blocked MAC noted uncharacteristic changes in their ability to exert control over their behaviours and emotions, demonstrating that their ability to self-regulate was compromised when undergoing initial moral distress. EMMRG-01 indicated that she was surprised by her own reaction after a shift in emotional control resulted in a behavioural outburst that she believed was out of character, *“I kind of lost it”*. Another participant described struggling to provide care to an overwhelming number of patients, which resulted in her making an error in patient care that she explained could have been fatal:

“I made a medication error and when I found that out I just stood at the IV pole and I just started to cry {emotional} because it just upset me so much” – EMMRG-02

EMMRG-02 showed a diminished capacity to exert self-control over her executive functioning, as indicated by the medication error and atypical over-expression of her

emotional reaction. While this compromised self-control may be partly due to the stressors in the deployed work environment; she expressed a direct connection between experiencing a blocked MAC and an inability to self-regulate her emotions and behaviours. As such, initial moral distress in the deployed environment may lead to self-regulation challenges for military HCPs indicative of the beginnings of ego-depletion (Baumeister, Schmeichel, & Vohs, 2007).

EMMRG participants indicated that acting despite barriers to a desired MAC as well as the resulting initial moral distress contributed to difficulty exercising self-control over their emotional and behavioural reactions. The outcomes of a blocked MAC denoted a need for respondents to practice effortful decision-making and self-regulation, executive functions that tax the ego's limited resources and contribute to depletion. Furthermore, discrepancies between the self and personal moral standards likely begins a self-regulatory feedback loop where the military HCP attempts to meet perceived moral expectations by increasing self-regulation of related behaviours (Baumeister, Schmeichel, & Vohs, 2007; Sheikh & Janoff-Bulman, 2010). Therefore, the initial moral distress at obstruction of intended morally desirable actions engaged the process that could lead to ego-depletion.

Moral Distress Resolution

While initial moral distress may place demands on the ego's limited resources, engaging in resolution processes could ultimately help to lessen resource demands and ego-depletion by regulating the self's behaviours until moral standards are met or by altering moral schemas to accommodate new information (Dombo, Gray, & Earl, 2013; Sheikh & Janoff-Bulman, 2010). Participants outlined attempts to directly address discrepancies between the perceived self and their moral standards by striving to directly alter the situation to remove the barrier blocking their MAC or by moving concerns up the chain of command. Military HCPs also described using self-reflective appraisal to integrate new information into their moral schemas, allowing them to successfully resolve their moral distress:

*"Well I just convinced myself that was how it had to be... I practice medicine exactly as I was trained and I would in Canada until I couldn't and then I didn't and I believe that. So if you can't then it's not your fault anymore... I don't feel personally responsible...we made the right decision under the circumstances, but I didn't create the circumstances... And as a team if we had not been there it would have been much worse, I imagine worse, so we were making things better even if it wasn't 100% solution every time as we would aim for in Canada" –
EMMRG-20*

While EMMRG-20 was sometimes not able to act on her MAC, she explained that she did not feel “personally responsible” because of the influence of uncontrollable contextual elements in the deployed environment. She described engaging in self-reflective appraisal that allowed her to consider and accept those aspects of the moral dilemma that were uncontrollable and to then integrate this new information into her moral schemas and expectations regarding personal moral responsibility. However, this appraisal process requires self-control and effortful decision-making which taxes limited self-regulation resources and may be difficult to achieve depending on the state ego-depletion.

Participants observed that they were often unable to attempt moral distress resolution because of compromised self-regulation associated with challenges in the deployed context, which inherently presents a high frequency of contextual stressors that also require coping and tax self-regulation resources (Gibbons et al., 2013; Owen & Wanzer, 2014; Baumeister, Vohs, & Tice, 2007). (For some, these self-regulation difficulties persisted even after leaving the deployed work environment and negatively affected later resolution processes.) EMMRG-15 described feeling unable to attempt resolution processes due to the pressures of the deployed environment:

“And I always thought to me, to myself I thought you know what, I’m tough I grew up in Toronto, I can get past it. So no matter what comes my way we are just going to work with it and deal with it later. And that was kind of my mentality through the whole thing” – EMMRG-15

She adopted a ‘deal with it later’ mentality and avoided attempts at moral distress resolution due to the additional difficulties of the deployed environment. She explained that while she hoped this mindset would allow her to cope it did not allow for self-reflection which prevented resolution, “*what I was doing was just stuffing it into a closet and not addressing any of it*” (EMMRG-15). EMMRG-11 further outlined how the stressors in the environment affected her ability to self-reflect on morally distressing events:

“You’re totally in survival mode when you’re there, right. The hours are so long the pace is so heavy, the work is so dirty, it’s hot, whatever, and you just put your head down and you just do your job. I think it’s when you get home and have some time to reflect and to try and sort it all out that... some of us don’t feel very good about what happened” – EMMRG-11

She described how the stressors inherent in the context were so demanding that she entered ‘survival mode’, which implies an inability to engage executive functions as they tax self-regulation resources required for coping with deployment and further

deplete the ego. Participants portrayed the deployed context as leading to exposure to a heightened number of stressors that made allocating self-regulation resources to moral distress resolution difficult or unfeasible. EMMRG-11 stated that once outside of the demanding deployed environment she felt able to practice self-reflection, but still struggled to fully engage in the resolution processes, *“I couldn’t even talk about it because it would make me so angry”*. She explained that she was unable to self-reflect and resolve these challenges because of emotional upset, which signifies compromised self-regulation.

While resolution processes may resolve initial moral distress and lessen ego-depletion by allowing one to exit the self-regulatory feedback loop, many military HCPs found self-reflection difficult due to already limited resources. Since the resolution process itself consumes self-regulatory resources, the compounded demands on the ego from moral and non-moral stressors in the deployed context made attempting the resolution of moral distress more challenging. Despite allowing for eventual relief of moral distress, resolution processes engage executive functions that make increasing demands on heavily taxed self-regulation resources and further contribute to ego-depletion. Yet, continuing without resolution when MACs are blocked by contextual forces protracts the self-regulatory feedback loop and advances depletion of the ego.

Reactive Moral Distress and Ego-Depletion

When unresolved, initial moral distress persists and becomes reactive moral distress entwined with additional complex emotional and psychological reactions (Jameton, 1984). Reactive moral distress led to participants enduring intense and difficult emotions, such as powerlessness and self-criticism, as well as interruptions to their beliefs and worldviews. Military HCPs also described experiencing moral emotions when unable to resolve initial moral distress, which are linked with self-regulation demands (Sheikh & Janoff-Bulman, 2010; Gao et al., 2014). Participants described considerable challenges to practicing self-regulation of thoughts, emotions, and behaviours when facing reactive moral distress, signifying significant ego-depletion.

Military HCPs with reactive moral distress described complex negative emotions as well as uncertainty regarding their moral beliefs and roles as military HCPs. Moral emotions such as guilt, shame, and regret also were expressed by participants who were experiencing unresolved reactive moral distress. EMMRG-01 found that she, and other HCPs observed, felt the emotional consequences of reactive moral distress and often blamed themselves for the outcome of a blocked MAC:

"I think there was a lot of internal blame . . . a lot of us internalize it and are frustrated that we don't know more. I mean we can't know everything about everything"

- EMMRG-01

Despite acknowledging that overcoming barriers was often not possible, she observed that the tendency of military HCPs was often to internalize self-blame, or shame. The resolution of these self-conscious moral emotions necessitates self-reflective appraisal which places increased demands on self-regulation resources (Sheikh & Janoff-Bulman, 2010).

The consequences of reactive moral distress were associated with significant changes in participants' emotions, thoughts, and behaviours which demonstrated substantial self-regulation resource depletion in this state. Participants explained that experiences with blocked MACs led to changes regarding their perceived role as military HCP. EMMRG-01 shared how encountering a blocked MAC when struggling to provide care for critically injured children during resource shortages not only led to intense emotions, but a questioning of her belief systems:

"When children die it just doesn't add up and it just seems too unfair and then you just, people go to a bad place, like what the frig are we even doing here, you know, this is crazy and extremely emotional" - EMMRG-01

During reactive moral distress, EMMRG-01 noted that military HCPs "go to a bad place" that leads to the emotional experience of powerlessness, describing how the outcome of a blocked MAC "just doesn't add up" and feeling that the situation is "crazy", implying a perceived lack of control. She told of questioning her role and perceived purpose as a military HCP, indicating uncertainty, self-criticism, and disruption of her moral understanding and beliefs. While this moral disequilibrium and dissonance may be resolved by self-reflection and appraisal, the reconsideration of moral schemas requires executive functions and further taxes self-regulation resources, implying added difficulty when attempting resolution processes (Sheikh & Janoff-Bulman, 2010). EMMRG-22 described frequently being unable to provide sufficient care and resources to an overwhelming number of desperate civilian patients that sometimes inadvertently resulted in conflicts:

"And after a while it gets, if you let it get to you it can get almost demoralizing and make you feel angry and you do not want to help these people." - EMMRG-22

EMMRG-22 illustrated that the long-term consequences of unresolved moral distress can impact emotional states as well as thought patterns. He noted an uncharacteristic

shift in his perceptions as a military HCP, such that it became difficult to practice self-control and provide care. He attributed this significant change to the “demoralizing” effect of encountering persistent barriers to his desired MAC that went unresolved. This negative shift in his perceptions of his role as a military HCP indicates a compromised ability to self-regulate thoughts and emotions and to maintain normative functioning. Difficulty self-regulating was also expressed by EMMRG-27 who described unresolved moral distress as contributing to challenges performing tasks requiring executive functions:

“I think unresolved issues have a way of spurring you to go back overseas because you feel you have unfinished business. My life kind of came apart a little bit in 2007, I was preparing to go overseas and I realized at the time that one of the reasons I am going or wanted to go overseas so badly was because I had unresolved issues from the first tour. And I needed to prove to myself that I could do this, which is not a good reason to go overseas.” – EMMRG-27

EMMRG-27 explained that unresolved moral distress was a significant influence and motivation when making his decision to redeploy. He described his desire to “so badly” return overseas as driven by the need to resolve “unfinished business” and prove his ability to function as a military HCP in the deployed environment. He acknowledged that these motivations were not a “good reason” to deploy, but implied that he was unaware of this influence on his decision-making before having a sudden realization as his “life kind of came apart” (EMMRG-27).

For participants, unresolved initial moral distress led to reactive moral distress and was associated with increased difficulty maintaining normative functioning and engaging in executive processes. The accompanying complex moral and non-moral emotions further taxes self-regulation resources and indicate that a self-regulatory feedback loop is ongoing and not satisfactorily resolved. This contributes to further ego-depletion as demonstrated by participants’ compromised abilities to practice decision-making and self-regulation of thoughts, emotions, and behaviours.

Chronic Reactive Moral Distress and Extensive Ego-Depletion

If multiple encounters with morally distressing events occur, as is likely due to the challenges of working in the deployed context, participants found that the personal outcomes of reactive moral distress were compounded (Litz et al., 2009). Experiencing subsequent morally distressing events was common for EMMRG participants who connected multiple instances of blocked MACs with a cumulative progression of negative psychological consequences. Participants associated this type of ‘chronic

moral distress' with self-regulation failures as well as psychological disorders. Long-term and frequent or 'chronic' moral distress was articulated by several EMMRG participants as a risk for military HCPs who were not able to achieve successful resolution. EMMRG-07 described experiencing multiple morally distressing events in her deployment in a conflict zone with high civilian casualties, such as having patients die after being transferred as mandated to local facilities, providing palliative care for severe trauma injuries, and handling bodies being buried in mass graves. The chronic moral distress experienced by EMMRG-07 involved difficulty practicing self-regulation during her deployment which continued after her return:

"The one guy I worked with in [location] my last posting and we were in the platoon together, and we don't talk about it at all, we can't. It's still that raw and it's like, God, it's 18 years ago, you know...and people say 'oh you guys were in [location]', conversation over, two people walk in two different directions, it's bad, it's so raw you know" - EMMRG-07

She demonstrated difficulty successfully resolving her moral distress, and described continuing to experience negative emotional consequences, even after having been away from the deployed context for eighteen years: "it's still that raw". She expressed being completely unable to engage in self-reflection and appraisal of the experience even with close coworkers from the same team who had similar experiences. She depicted being unable to employ executive functions such as the self-regulation of her thoughts, emotions, and behaviours in order to attempt appraisal and resolution; describing an inability to discuss the issue and an immediate desire to flee while simultaneously acknowledging this response is not beneficial, "it's bad". These self-regulation difficulties are indicative of an ongoing feedback loop and severe ego-depletion.

The negative consequences of chronic moral distress were portrayed as increasingly cumulative and resulting in severe consequences for participants such as being unable to redeploy or leaving the profession. After her experiences with chronic unresolved moral distress, EMMRG-07 stated she lost resilience, and was unable to return to the deployed working environment. She shared that her decision to no longer deploy was undesired and disappointing, but necessary to prevent significant personal damage:

"I wasn't able to do it anymore. I kind of think it's like when you're in your early 20s and...you can be hung over or not hung over the next day and then you can go back and do it again on the Saturday night... I don't want to feel like that anymore... I guess I know the answer but I don't. I just think I have had too many" - EMMRG-07

"The reason I got out was because I knew I couldn't deploy anymore and it was difficult {emotional} because it was the thing that I was really good at... I'm proud of the time I did, but it was a hard pill to swallow... Because I really think that if I had to deploy again, um, I think I would be done" – EMMRG-07

The cumulative effects of unresolved moral distress are demonstrated by EMMRG-07 through the metaphor of alcohol and phrases like, "I just think I have had too many", to describe the progression of her experience. Despite feeling proud of her accomplishments as a military HCP, she shared that the compounding consequences prevented her from redeploying, saying decisively that she "couldn't" while indicating that she ideally would have preferred to continue, "it was a tough pill to swallow". This suggests that a self-regulatory feedback loop was unresolved and continued to drain the ego's resources which prevented her from being able to exert self-control and cumulatively affected her psychological wellbeing, "*at some point you are just really bitter and twisted*" (EMMRG-07). She revealed that returning to the deployed context and experiencing additional moral and contextual stress would lead to potentially debilitating negative personal consequences, "I think I would be done", suggesting a risk of severe ego-depletion leading to significantly compromised normative functioning and mental health concerns.

Other participants directly connected their multiplicity of experiences with unresolved moral distress to the development of stress-related mental health problems, which have been connected to prolonged demands on self-regulation resources (Walter, Gunstad, & Hobfoll, 2010; Rivkin, Diestel, & Schmidt, 2015). Some participants articulated a causative relationship between experiencing barriers in moral dilemmas, being unable to engage in resolution processes, and developing a serious stress disorder. EMMRG-15 described her belief that the development of her PTSD was related to the cumulative effects of long-term psychological demands related to blocked moral challenges:

"in the end, I ended up with PTSD and I also had a lot of issues with some of the ethical things" – EMMRG-15

"I don't know if I will ever go back to a theatre of war...when I was diagnosed with PTSD it was because I had long-term chronic stress" – EMMRG-15

She explained that while she felt that she was coping with the consequences effectively, "*I thought I was dealing really well*" (EMMRG-15), being continually unable to achieve resolution of her moral distress led to negative psychological health impacts. She stated that during this time she was unstable and did not feel like her normal self, "*it took me a year and a half to stabilize it, to start thinking I was normal again*"

(EMMRG-15). This suggests that unresolved chronic moral distress likely has a cumulative demand on self-regulatory resources due to the feedback loop and may eventually lead to severe ego-depletion and an inability of the self to maintain stable normal functioning.

EMMRG-01 observed similar difficulties with psychological health in military HCPs which she attributed to experiencing frequently blocked MACs:

“[Experiencing moral dilemmas] messes up health care professionals and I know many have come back with you know, whether it’s PTSD, compassion fatigue, caregiver fatigue, um, vicarious traumatization, whatever, burnout. A lot of it has to do with the ethical dilemmas we are put into” – EMMRG-01

She shared her perception that for many military HCPs, encountering barriers in a moral dilemma and the resulting experience of moral distress, is directly related to the development of stress-related psychological health concerns. EMMRG-07 agreed, stating that these consequences could be severe and potentially life threatening, *“[they] were so sick after, you know, and suicidal”*, depicting how moral distress can be a significant and relentless challenge for many military HCP on deployment.

Discussion

Clear parallels were described by EMMRG participants between the progressive experience of moral distress and the self-regulatory challenges of maintaining normative functioning under conditions of ego-depletion. Military HCP participants depicted their encounters with blocked moral dilemmas as psychologically depleting and involving difficult moral emotions; occurrences that initiate a self-regulatory feedback loop and require engaging executive functions, gradually taxing personal resources. They demonstrated the importance of resolving initial moral distress as well as the difficulty of engaging resolution processes due to other moral and non-moral contextual stressors in the deployed environment, which also placed demands on self-regulation resources. If initial moral distress went unresolved, participants described struggling with moral disequilibrium as well as diminished abilities to self-regulate thoughts, emotions, and behaviours; the continuous loop led to ongoing depletion of the ego. When encountering subsequent moral dilemmas involving barriers to their MAC, participants with unresolved moral distress portrayed negative consequences as compounding cumulatively. Military HCPs in this state described heightened difficulty engaging resolution processes and exhibited significantly compromised abilities to self-regulate indicative of severe ego-depletion, especially if moral distress was experienced

chronically. Participants shared their belief that the development of mental health disorders for military HCPs was connected to the experience of chronic moral distress.

This ego-depletion framework based on limited self-regulatory resources may help to further understanding of stress-related mental health challenges facing military HCPs. Military HCPs have been found to develop stress related psychological illness such as compassion fatigue, burnout, depression, and anxiety due to their exposure to medically traumatic experiences, rather than combat traumatic experiences (Owen & Wanzer, 2014). Jones and colleagues (2008) found that military HCPs in the UK Armed Forces were overrepresented in referrals to mental health services, with medical technicians for example composing 3% of the armed forces but accounting for 7% of psychiatric evacuees. However, little research has examined the consequences of providing morally complex care in the deployed environment on military HCPs' quality of life (Gibbons et al., 2013). While EMMRG participants expressed their belief in a causal link between experiencing moral distress and developing stress-related mental health issues, further research is needed to establish this connection. Since prolonged demands on self-regulatory resources have been associated with stress-related psychological disorders such as PTSD symptoms and burnout, an ego-depletion framework may provide a means of directly connecting morally distressing experiences to the frequently observed negative mental health outcomes for military HCPs (Jones et al., 2008; Walter, Gunstad, & Hobfoll, 2010; Rivkin, Diestel, & Schmidt, 2015). However, more research examining the relationship between ego-depletion and the development of clinical disorders is also essential to verifying this connection and is called for in the psychology literature (Rivkin, Diestel, & Schmidt, 2015; Baumeister, Vohs, & Tice, 2007).

While establishing a correlation between moral distress and mental health would be beneficial for the wellness of individual HCPs, it is also crucial for the effectiveness of the military organization. In civilian HCPs moral distress is linked with compassion fatigue and burnout; reduced job satisfaction; decreased employee morale; high staff turnover, with 15% of nurses having left previous positions due to moral distress; and lowered retention rates in the department, organization, and profession (Corley, 2002; Davis, Schrader, Belcheir, 2012; McCarthy & Deady, 2008). As such, any military force concerned about the high readiness capability and the ability of HCPs to perform their jobs effectively must be concerned about HCP's moral well-being, including moral distress (Fry et al., 2002). Understanding the experience of moral distress and its

consequences for military HCPs is essential to bolstering individual and team capacities as well as the overall effectiveness of the military organization.

Limitations

There are two potential limiting factors of this paper: a potential bias when selecting participants, and participants were not asked directly about the concept or experience of 'moral distress'. First, military HCPs for the EMMRG study were recruited by describing that potential participants would have had experience with 'ethical dilemmas', however this may have led to more individuals who had experienced an ethical dilemma negatively to participate. If an ethical dilemma went unresolved and a person experienced it negatively, the HCP may be more readily be able to identify themselves with the study criteria and perhaps even motivated to participate as a means of attempting to address and resolve it. Secondly, while participants were asked about their experiences with moral dilemmas, the specific terminology of 'moral distress' was not explained or used in the interview guide. However, since moral distress by definition is the experience and consequences of encountering a barrier to one's desired MAC in a moral dilemma, it is possible to identify potential moral distress without directly referring to the concept. The experiences of participants who described encountering a barrier to their MAC were included in the analysis.

Conclusion

This analysis suggest evidence for a self-regulatory conceptual basis of moral distress and indicates the potential of a framework based on the psychological mechanism of ego-depletion for understanding the progressive, cumulative experience of moral distress in military HCPs. Encountering a barrier to a MAC and having to act in a way other than desired was stressful and depleting for participants and necessitated resolution processes, all of which involved engaging executive functions. Analysis of participant's narratives also supported the potential applicability of a self-regulatory feedback loop when considering the moral distress resolution process; when military HCPs perceived discrepancies between the self and their moral standards, they exerted self-control over their actions in an attempt to meet their expectations or integrate new information into their moral schemas. Since resolution processes also place demands on limited self-regulation resources, some military HCPs found that the non-moral and moral stressors compounded and made it difficult to attempt resolution in the deployed environment. As initial moral distress progressed to reactive moral distress, participants described experiencing increased difficulties exerting self-regulation over their

thoughts, emotions, and behaviours indicative of progressive ego-depletion (Baumeister, Schmeichel, & Vohs, 2007). The self-regulatory feedback loop involved in ego-depletion also aligns with the effects of moral residue from unresolved moral distress (Epstein & Hamric, 2009), indicating a potential explanation for its cumulative progression and negative consequences for military HCPs, especially when exposure is chronic.

While more practical research is needed to explore and firmly establish these associations, a model that incorporates the mechanism of ego-depletion could potentially advance our knowledge of the moral distress process for military HCPs. Connecting moral distress to findings in ego-depletion research provides a theoretical conceptualization of the psychological mechanisms involved at the individual level and may illuminate a possible relationship between the development of moral distress and stress related mental health issues. If verified, this self-regulatory framework would allow for the extensive findings related to the prevention and recovery of ego-depletion to be applied to the moral distress resolution process, and potentially offer insights into improving care and wellness for morally distressed military HCPs. With a better understanding of the moral distress process and its consequences for individuals and military organization, we can bolster military HCPs' capacity and willingness to take courageous action in the face of morally challenging situations.

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