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Leadership and Moral Stress: Individual Reaction Patterns among First Responders in Acute Situations that Involve Moral Stressors

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Abstract

The aim was to gain a deeper understanding of individual reaction patterns among professional first responders (emergency treatment, military officers, and police officers) during and after acute situations that involve moral stressors in combination with cumulative stress. Swedish and Norwegian informants within these professional groups were interviewed (n=37). Data were analyzed according to a grounded theory approach. A model was developed according to which long-term effects following such stress exposure depends on the character of the continued everyday living. In particular, the frequency and intensity of perceived daily hassles and uplifts is important. Cognitive-behavioral aspects are discussed to prevent and/or reduce negative long-term reactions.

Keywords: Moral stressor; Moral stress; Stress reaction; First responders; Research method

Introduction

Several occupational groups are at risk of having to make morally difficult decisions during acute, stressful situations. Examples of such groups are physicians and nurses in emergency treatment, military officers and police officers (these three professional groups are henceforth called "first responders"). Lately, this problem has gained a lot of attention in Great Britain and the United States as many war veterans returning from deployment in Afghanistan and Iraq have developed post-traumatic stress disorder (PTSD). A high number of suicides, violence within the family, other criminality and substance abuse are part of the problem picture [1,2].

There are several types of stress an individual can be confronted with. One type is acute stress, which is severely psychologically demanding in nature. Another type, accumulated stress, is milder in nature but is encountered more frequently. Jobs that react to traumatic events, such as first-responders, often have to deal with both of these stress types simultaneously [3,4].

Traditional stress research has primarily focused on well-established stress types, such as acute and accumulated stress. Another form, which has been highly over-looked, is moral stress. This refers to painful reactions that might arise when an individual is conscious of the morally appropriate action a situation requires, but cannot carry it out due to formal laws and regulations or institutional obstacles, as for example, lack of time, lack of leader support, power relations etc. The alternative is when one acts according to one's conscience but against the organizational regulations, norms, etc. [5]. It is similarly important to note that the experience of moral stressors may differ depending on hierarchical level as leadership at higher organizational levels is more strategic in nature. In addition, severe moral stress is suggested to resemble existential anxiety, which may be the most difficult form of anxiety to treat [6]. Having to experience situations that are inconsistent with one's own deep moral convictions may cause lasting injuries on an emotional, psychological, behavioral, spiritual, and social level [7].

Until recently, moral stress in professional groups has almost exclusively been studied in relation to care environments in general, particularly with regard to decisions concerning choices to end life-sustaining treatments in particular [8]. Exceptions include a study on moral stress among international humanitarian aid- and rescue workers [9] and a study on the military handling of a terrorist [10]. Otherwise, no other studies were found where this potential mechanism was studied in professional first responder groups having faced the combined stressors described above.

To understand moral stress, it is necessary to look at the individual's coping mechanisms as they tend to play a crucial role in the evolvement of reactions. To illustrate, different forms of constructive reflective thought have, on the one hand, shown to mitigate the negative effects of acute situations that involve moral stressors. On the other hand, continuing to think about a negative event might be harmful for well-being. If re-appraisal strategies emphasize, for example, self-blame, initiating negative events might be heightened, resulting in depressive symptoms [11].

Research also brings forward emotional detachment as a way of escaping negative emotions [12]. Emotional distancing to avoid suffering might be favorable in that the individual stays functional, whereas there is a risk for negative effects on empathic attitudes that affect moral awareness negatively [13] which, at worst, might make the individual's discipline and control deteriorate over time [14] creating apathetic and cynical individuals [12]. Avoidance or numbing is most likely related to self-blame, inability to forgive oneself (i.e. guilt, shame) or demoralization which ultimately might result in, so called, moral injury, due to a lasting influence of psychological trauma by reason of moral conflict [7]. Literature shows how early emotional numbing and distancing predict PTSD in a longer perspective [15]. Even so, research on constructive reflection and emotional detachment among professional first responders facing multiple stressors including moral aspects appear to be lacking.

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It also appears necessary to take social support into account, in addition to stressors, stress reactions, and coping mechanisms as previous research shows how this can mitigate for stress impact in general, while trust and leader support have shown to moderate feelings of moral stress in particular [8,9,16-18]. For example, a supportive leader style appears to pave the way for a safer climate/culture, besides allowing for individual reflection in relation to colleagues as well as leaders, thus enhancing moral sensitivity and moral awareness [19-21].

Over the past decade PTSD diagnostics and measurement tools have dominated the leading scientific journals as the leading negative reaction to acute, stress filled situations that individuals experience. In light of the previously discussed drawbacks, the over-focus on this particular reaction appears to be problematic. One of these is that other stress-related reactions that fall outside the well-defined symptom picture are at risk of being neglected. For example, Rosner and Powell explicate the DSM-V to be better suited for single-event traumas that provoke inner conflict [22]. They note that cumulative "wear and tear" stress, including morally injurious aspect such as combat stress or complex chains of traumatic events, are not adequately encompassed in current conceptions of PTSD [22-24]. A broader scope of reactions may be better suited to define and assess an individual's reaction(s) to different types of stress.

In summary, long-term psychological effects among professional first responders in terms of individual stress reaction patterns of moral stressors, taking multiple stressors, coping patterns, and social support into account, are still relatively unexplored. Thus, the aim of this study was to gain a deeper understanding of individual reaction patterns among first responders during and after acute situations that involve moral stressors in combination with cumulative stress.

Method

Participants

As long-term psychological effects among professional first responders in terms of individual stress reaction patterns of moral stressors, taking multiple stressors, coping patterns, and social support into account, are still relatively unexplored, informants were selected on the basis of a grounded theory approach [25]. Three occupational groups of first-responder character were selected; the armed forces, the emergency treatment, and the police. The interview process started out with just a few informants, additional names being provided as it continued, and informants consequently being selected in accordance with snowball sampling with the intention to capture as wide of a variety of experiences and occupational roles as possible [26]. Contacts at the three types of organizations provided names of individuals, most of which held managerial or operative leader positions. In total, there were 37 participants at different hierarchical levels, both Swedish (n=32) and Norwegian (n=5), all having experience of morally difficult decisions during stressful situations. 16 informants (n=2 at higher organizational levels; colonel, lieutenant colonel, n=7 at middle organizational levels; major, captain, n=7 at lower organizational levels; commanders, cadets) worked within the armed forces, 11 informants (n=4 at higher organizational levels; chief (senior) physician, assistant chief (senior) physician, n=3 at middle organizational levels; chief medical officer, n=4 at lower organizational levels; interns, resident physician, nurse) were from the emergency treatment, and 10 informants (n=2 at higher organizational levels; chief commissioner of a county police department, n=4 at middle organizational levels; sergeants, n=4 at lower organizational levels; detective inspectors) served within the police.

The Swedish informants were initially contacted by e-mail and informed about the aim of the project and use of data. Communicating with the informants by e-mail was a conscious strategy to give them time to reflect on whether to give us their informed consent. The e-mail was followed up and a meeting was arranged. One person that was asked to participate chose not to. The Norwegian informants, all working within the Norwegian armed forces, were approached in person by one of the authors. All dealings with study informants were conducted according to the ethical guidelines of the Swedish Research Council. The study has been subject to ethical review and vetting, and approved by the Swedish Regional Ethics Committee of Stockholm (Protocol 2011/5:2, Protocol 2013/53-32) and the Norwegian Social Science Data Services (ref: 30850/3/ MAS).

Data collection

Data were collected by qualitative semi-structured interviews following a prepared interview guide, which had previously been tested in a couple of pilot interviews. The interviews consisted of open-ended questions and individually adapted follow-up questions. Apart from being asked to reflect upon acute situations involving moral stressors in general, all informants were specifically asked to consider the following themes (texts in italics shows examples of sub-theme questions):

- Background questions (age, position, education, experience, etc.)
- An acute situation
o Moral stressors
  ▪ Can you describe the most morally taxing situation you have ever experienced during work?
  ▪ What happened? When did it happen? For how long did the situation last?
  ▪ Was there any collaboration?
o The handling of the situation (before, during and after)
  ▪ What did you do to handle the situation?
  ▪ What were the resources available to handle the situation?
o Reactions (during and after)
  ▪ How did you react during the situation?
  ▪ How did you feel during the time that exceeded the situation?

The informants were interviewed individually at their places of work, at the premises of the Swedish Defence University, Stockholm, or at the Royal Norwegian Naval Academy, Bergen, during the period of February 2011 to September 2012. The interviews lasted about 45 minutes to 80 minutes and were all recorded. All interviews were conducted and analyzed by the authors.

Data analysis

The interviews were transcribed verbatim and analyzed consecutively according to the constant comparative method. The first step is known as "open coding," which means that data are examined line by line to identify the participants' descriptions of actions related to the themes mentioned in the interviews as well as thought patterns and feelings associated with these actions. After that, codes are formulated in words resembling those used by the participants. To illustrate:

Yes, it manifests itself in various ways. You wake up early in the

morning… fall asleep in a good way, have always done, but wake up, everything spins in your head. Yes, it spins in my head. So it is as if I start the workday as soon as I wake up… and there are consequences, so I get up and have an early breakfast and maybe I do some training, but most of the time I sit down here and work in the morning, so I can be here around five:ish… that's too early, sure it is…

This excerpt was coded as *Sleeping problems*. The second step was to sort the codes into different categories. The previous example was sorted into the category *Negative long-term reactions*, and finally into the superior category *Long-term stress reaction*. This process of analysis was conducted by making constant comparisons between the interview transcriptions, codes, and categories. Both codes and categories were also analyzed in respect to the selection criteria, meaning that comparisons were made between the different participants and their positions in terms of organizational affiliation and hierarchical level. Finally, the third step consisted of creating a model by fitting the categories together into superior categories using the constant comparative method. Proposal to such a model is illustrated in Figure 1.

In practice, the steps of analysis were not strictly sequential, as we constantly moved back and forth in re-examining interview data, codes, and categories—a working procedure that is in line with the iterative process of grounded theory. The interviewing continued until the data appeared to have reached a point of saturation, or, in other words, the point at which the most recent interviews did not seem to make any substantial contribution to the model which had successively been generated on the basis of earlier data. In the following section, the model is presented, followed by a presentation of its categories. This particular order is used to give parts their meanings when understood in relation to the whole model. Within the different parts of the figure, the most illustrative examples will be presented.

Results

The interview analysis resulted in a suggested theoretical model of individual reaction patterns which is summarized in the following (Figure 1).

First responders work in situations characterized by external stressors. These often include confrontations with acute and moral stressors. Such stress exposure initiates an individual reaction in terms of appraisal processes of the event(s), coping efforts and emotional reactions. A key factor to the long-term effects on health and functioning is the character of the continued everyday living after the stress exposure. In particular, the frequency and intensity of daily hassles and uplifts with varying ascribed subjective importance is important. In the favorable case, the meaning of hassles is reduced and the value of uplifts is increased. In the unfavorable case, the picture is reversed.

The causal relationship between the appraisal of daily hassles and uplifts and the individual reactions is continually bidirectional. This implies that not only the external event but also the reaction will influence the personal significance ascribed to everyday events and the potential long-term consequences.

The initial reaction, the character of the continued everyday living and the long-term effects are all affected by framing individual and contextual factors. Examples of individual factors include their socio-demographical backgrounds, individual personality characteristics and their socio-biological make-up of vulnerabilities and resilience to stress and coping. Contextual factors that influence regard the working environment typically characteristic of first responders, which includes

cumulative stress in daily work tasks. These stressors can be mediated or enhanced by the perceived social support the individual has from formal and informal sources within their surroundings.

As hassles and uplifts play a central part in the suggested model, definitions of the two concepts are needed. Thus, drawing on the writings of Lazarus (1984), daily hassles are defined as "experiences and conditions of daily living that have been appraised as salient and harmful or threatening to the endorser's well-being" [27]. Accordingly, daily uplifts are defined as "experiences and conditions of daily living that have been appraised as salient and positive or favorable to the endorser's well-being". Below, descriptions of the categories underpinning the evolvement of individual reaction patterns during acute situations that involve moral stressors as shown in Figure 1 are presented.

Stress exposure

Acute stressful events involving a moral stressor: The results show a variation of moral stressors with regard to the informant's organizational and hierarchical affiliation, which in turn affect the evolvement of individual stress reactions. At higher organizational levels, stressors appear to be more *personnel-related* as they mainly involve morally tough staff matters (e.g. economic prioritization, disciplinary actions, conflicts of loyalties, etc.). One example with regard to the emergency treatment, which is illustrative for all the aforementioned organizations, concerns having to deal with austerity packages as it is morally difficult to cut down on costs.

At lower hierarchical levels, moral stressors have, in contrast, shown to be more concerned with the target audience of respective organization, thus being more *those in need-related*. In the case of the armed forces, those in need-related refer to the local population (might also include the adversary) while patients and their relatives are emphasized in the emergency treatment. Suspected criminals, victims, and their relatives constitute the target audience with regard to the police. In the case of the armed forces, an illustrative moral stressor at lower levels of organization concerns the urge to come through for comrades in combat but being unable to do so due to Rules of Engagement (RoE) in regards to restriction of movement. Independent of hierarchical level, the nature of the moral stress is described as equally difficult to cope with.

Individual factors

Although not an explicit topic in the interview guide (see above), a recurrent theme in the informants' stories was different comments on the importance of personal characteristics. Following from this, we decided to regard this group of answers as a category of its own. A typical phrase was that how you handle an acute, morally stressful episode depends on "how you are as a person". Follow-up questions revealed personality-related aspects such as being emotionally stable or unstable and being open to seeking social support or not. In particular, the issue of being resilient or vulnerable to stress was emphasized. Related to this were comments on self-selection. It was mentioned that people who are vulnerable to acute stress exposure seldom seek the kind of professions studied in the first place, and, if they do, often leave after a short period.

Socio-demographical aspects such as gender and age were also mentioned. Beginning with age, most comments were not related to age *per se*, but rather to the value of having a long professional experience. Regarding gender, two themes emerged. The first concerned various problems faced by women in male-dominated professions such as the

military and the police. The second included reports on difficulties for some men in these kinds of professions to accept that they need social support, and to actually seek such support, after stressful episodes.

Contextual factors

The under-pinning categories that built up this category include environmental factors such as the cumulative stress that the informants experienced in their everyday job tasks and the appraisal of formal and informal social support rendered.

Environment with cumulative stress: All acute situations involving a moral stressor that were reported in the interview material were preceded by periods of cumulative stress impact due to, for example, high workload, long working hours, hostile environment, having to make difficult decisions, etc. There were, for example, reports of physical strains as it was difficult to calm down from the daily stressors as well as descriptions of how informants became worn, tired or exhausted.

It was an IED [Improvised Explosive Device, our remark] that blew the car up in the air…and it felt as if we should have pepped everybody up and said that "we're not home yet"…and really try to engage them in seeking for IEDs. Everybody was extremely tired and exhausted after six days in combat and people just wanted to get home alive and then there were only a few miles left until we reached the camp when the IED went off [the military].

Social support: The appraisal of having formal social support, as identified in data, was shown to mitigate negative stress reactions while, in contrast, the perception of lacking it rather tended to aggravate the impact of a stressful situation. In that respect, social support can be both favorable and unfavorable. Formal aspects of social support as well as informal qualities were identified.

Favorable formal social support: Favorable aspects of formal support referred to the prevalence of organizational routines or structures for promoting individuals' ability to cope with acute stressful situations. Some informants brought forward the importance of well-established routines for communication in terms of peer support, discussion forums, debriefing, after action reviews, and being encouraged to keep a personal diary for mental processing. "Debriefing, everybody gathers if there has been something that is particularly difficult… if there has been a complication that was not expected, then everyone gathers and sit down to talk" [the military]. There were also examples of formal support that concerned supportive leaders, particularly relating to the nearest leader (e.g. feedback, clear and proper information, high ceilings, etc.). Other examples involved the support of colleagues. The importance of being backed up by political leaders was also mentioned in terms of political responsibility to anchor acceptance for the task in society. Another form comprised symbolic actions like ceremonies or to award personnel medals. Additional types of formal supports comprised having access to professional welfare officers, priests or psychologists. With regard to the use of expert help, the importance of taking in competence from outside the organization was noted in order to uphold individuals' integrity and the professionals' ability to stay objective.

Unfavorable formal social support: Unfavorable aspects of formal support referred many times to the lack of support provided. Informants described lack of leader or collegial support (e.g. lack of interest, lack of understanding, the making of wrong decisions, ignorance, incompetence, nonchalance, etc.) or lack of organizational support (lack of time for recovery, particularly with regard to leaders, lack of time and forum for discussions on emotions and difficult experiences,

the organization in temporary working groups that such structures obstruct trustful relations, etc.). It was also noted that it might be more difficult for those in leader positions to seek the help of others.

I didn't have any time to reflect on it then, because other people were feeling bad so we tried to push it aside.

We tried to keep up the high spirits as much as we could in order to make things better… [the military]

Politicians were perceived to sometimes condemn and blame, thus contributing to lack of societal support which tended to add to the stress. Other examples included having too much debriefing. Some of the Swedish informants reporting too many ceremonies or priests and psychologists evoking processes that subordinates experienced that they lacked the competence to deal with. Many informants stated that there probably are measures of formal social support, but that they themselves lack first-hand experience of such. Some interviewees additionally reported the need for someone to identify those suffering from psychological illness as those individuals might not have the strength to seek support themselves.

Favorable informal social support: Informal social support as identified in data concerned spontaneous discussions with colleagues, to bandy ideas with when making morally tough decisions to ensure that one is doing what is best for others, to have a supportive climate for discussion on, for example, emotions, and to sometimes socialize outside of work. "The more I talk, the less there is in my rucksack [on difficult experiences, authors' remark]. So it is like talking until it disappears." [the emergency treatment].

We might brief each other. "I have done this and that, what do you think?", "Did I do the right thing?" "What do you think about…?" and "Now I'm here, I made this and that decision". If that person is in the same kind of position and he feels the same way then it feels good. Then hopefully you're doing the right thing as you have thought about the problem in a similar way. So, that's a relief in itself [the emergency treatment].

Descriptions also involved informal support of superiors and subordinates besides the support of family, relatives or friends and other types of social networks. "Formally in the organization?! No, I have more of various types of networks… that is what is most important to me when it comes to moral stress…" [the emergency treatment] Some informants valued doing work at home in the evening which was reported to promote mental processing. Additional forms of favorable informal social support included being commended by those one attend to or people outside the organization.

Unfavorable informal social support: Descriptions of unfavorable aspects of social informal support included for example organizational climate characterized by a low ceiling (e.g. formality, cultural differences, elderly people that "know best", lack of respect, lack of understanding for people making mistakes, bad atmosphere, jealousy, tough attitudes, jargon, etc.) aggravating discussions, feedback, and support.

It's more like people whine during coffee breaks and it's not a good way to go about a problem because, most of the time, it is like repeating the same old drivel …and it's not particularly constructive [the emergency treatment].

Additional unfavorable aspects that were accounted for in the interviews included keeping difficult experiences to oneself rather than sharing it with those unitiated as they often lack the frames of reference needed to comprehend or how one did not share experience as people

outside the organization seldom are interested in listening. Problems related to risks of relieving one's own pressures onto family members were also illustrated. Another example was the lack of understanding of one's own profession in society.

Initial reactions

The data analysis showed that the individual's personal factors combined with their perception of contextual factors impact their initial reactions after exposure to acute and moral stressors. Below, the underpinning categories; subjective appraisal/meaning, coping strategies and emotional reactions will be elaborated.

Subjective appraisal/meaning: The subjective appraisal of the external stressors acts like a lens and strongly affects the individual short- and long-term reactions, the coping efforts and the perception of social support. The appraisal of the external stressors will also, in the next step, be affected by the reactions, the attempts to cope with the situation and the support obtained. Thus, it is a reciprocal process that continuously goes on.

As shown in the model (Figure 1), it is not only the frequency and intensity of the everyday reactions that matters, but also the personal significance ascribed to what is happening. Before presenting the reactions we will therefore illuminate some response categories that illustrate the subjective meaning part of the model.

The informants described varying subjective meaning and personal significance to their work experiences after acute situations that involve moral stressors in combination with cumulative stress. The perception ranged from ascribing great personal significance to experiencing no significance at all.

Several informants described how they felt needed and that they contributed in important ways, therefore feeling satisfied.

So emotionally, I felt that we did what we could have done and this… that we did the right thing… and then a few days later when I found out that he died, of course you get sad…but at the same time you feel, know… understand that this will have consequences, there will be an investigation and all this, so… And that is a shame, but I never really doubted that we didn't do the right thing, but it felt very right what we did. All the way through [the police].

Figure 1: Individual stress reaction patterns. Illustration of the evolvement of individual stress reaction patterns following acute situations that involve moral stressors in combination with cumulative stress.

There were several informants that had a more negative attitude towards their work, assigning less or no amount of personal significance to their experiences at all. The latter category of individuals often had a resentful attitude towards their job. For example, some found it frustrating to not have adequate resources to provide help in a meaningful way, to not be able to help everybody or perceive that they cannot contribute or make a difference at all, thus feeling helpless. They had lost some or all faith in their task assignment.

It was also reported as annoying that one does not always receive information on outcomes of own performance and therefore cannot assess one's own achievements. Some struggle in finding a meaning in, or re-appraising the meaning, of their work.

My experience of this assignment at that time was still strong, but afterwards I can see… well, it has not meant a shit… and if I was to go down and do the exact same thing today, I would be open to not having any effect at all. And therefore my motivation has changed from being there to save the world and make the country a better place. Well, if I could do it, it would be great but it is no longer my main motivation, because I no longer believe in it [the military].

Some interviewees perceived there to be no possibility to contribute in the short run or that that they had no opportunity to contribute as an individual but only as a "small cog in a big wheel". The interview analysis shows that lack of understanding and questioning among others might reduce the personal significance one ascribes to one's own experiences.

Coping strategies: Both cognitive problem- and emotion-focused coping strategies were identified among all informants' at all hierarchical levels. In turn, emotion-focused strategies included emotional distancing and constructive emotional confrontation. These strategies were sometimes adaptive and sometimes maladaptive with regard to the handling of the acute situation in a short- and/or a long-term perspective.

Problem-focused coping: All informants reported coping strategies aimed at influencing the moral problem at hand, thus relieving the strains caused by the situation. As these strategies are closely connected to the specific task assignment, they vary between different hierarchical levels. Those reporting problem-focused coping as a main strategy tended to appraise the situation as impressionable.

At the lower end of the organizations, examples of problem-focused efforts included to take measures to uphold one's own security, to gather information, to be offensive, to make use of or fight for resources, to have decisions sanctioned, etc. Some coping strategies were directly directed towards the target audience of the organization, like omitting from safety procedures in order not to provoke, making sure not to put anyone in danger or to shoot in order to uphold the safety of oneself or others or to break laws and regulations for the sake of upholding safety or for having the ability to help.

At middle organizational levels, coping strategies were more leadership-related in terms of giving orders, to inform and discuss, to determine the course of actions, to adapt resources to the task assignment, to discuss unreasonable decisions with superiors or to anchor moral decisions among subordinates, to keep a low profile by not standing out or to document one's own doings in order to keep a line of retreat open.

Informants higher up in the hierarchy reported strategies that were, first and foremost, related to superior leaders, as for example, to have decisions sanctioned, to delay or ignore superiors' decisions or pass them by in the hierarchy, to demand resources needed, to
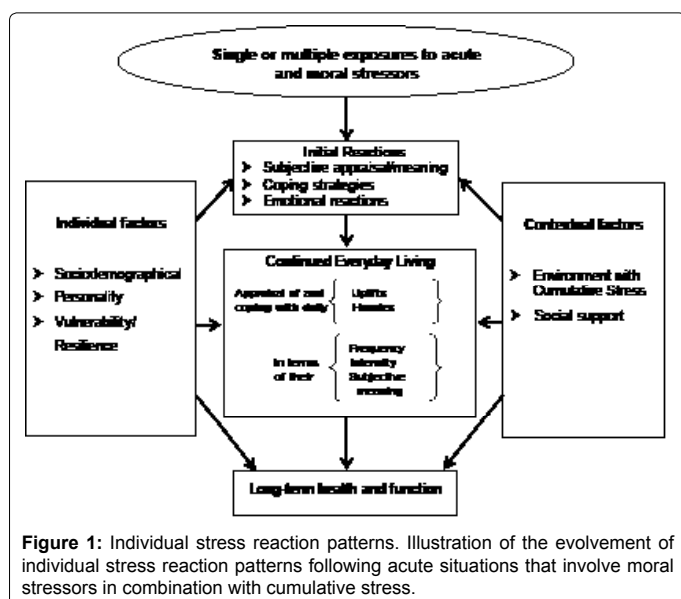
develop plans of actions, to handle political and diplomatic issues. A fewer number of problem-focused coping strategies were related to subordinate personnel as letting go of "unfit" individuals (the military), to gather information and to inform, to delegate, to create a moral base for decisions, etc. Furthermore, some problem-oriented strategies were directed towards the target audiences. For example, it was described as important to be humble and sincere, to show empathy and respect, to communicate in order to gain understanding or to be aware of their emotions and reactions. There were also examples of depicting states of ill-health in flattering terms so as to create a sense of safety (the emergency treatment).

Emotion-focused coping: The analysis shows emotion-focused coping strategies in terms of the individual either distancing emotionally or confronting what was perceived as morally strenuous. These coping strategies were more common among those informants appraising themselves as not being able to affect the situation (problem-focused) in what they perceived to be the morally correct way. While resorting to distancing relieved emotional discomfort, confronting rather served the purpose of processing difficult experiences or learning to handle similar situations in the future. A form of emotion-focused coping reported was *constructive emotional confrontation*. Several informants described adopting this strategy to confront what was perceived as morally strenuous. Informants described such strategies in terms of seeking information as a sort of feedback on, for example, the outcome of the stressful situation. Others conveyed how they reflected on the situation and the course of event.

The older you get, the more often the morally tough decisions will end up on your desk. Then you have to create your own value system, your own conscience that supports what you do, so that you will be able to live with it after you have done it. This requires you to be a fairly well-balanced person with reasons regarding culture, ethics, and morals. Not just in those acute situations, because it will transmit to your entire life, how you act… [the emergency treatment].

Additional strategies involved becoming one's own therapist, searching one's own heart through mental deliberation or conversing and reasoning with oneself. "I have never needed to see somebody to help me cope with a difficult situation. I manage that with my own thoughts and reflections" [the police].

Apart from constructive emotional confrontation, several emotion-focused strategies in terms of *emotional distancing* were identified among the informants in conscious or unconscious attempts to rather escape than confront emotional suffering. These strategies involved to shake off difficult experiences, thus not dwelling on things, to repress thoughts, to put feelings aside, to joke, to change the subject, to be professional and focus solely on the task assignment or to emphasize long-term instead of short-term goals. "I think that many have a sort of breathing hole… to joke about things. Well, I don't think that others would understand or think that these jokes are gruesome … but it's like a breathing hole… [the emergency treatment]" or "It is really difficult to meet people that suffer. But I don't find any other way than to believe in the results in a long-term perspective…" [the emergency treatment] There were also descriptions of how the uniform or stepping into the professional role constitutes a sort of psychological shield. Feelings of invulnerability, like "It will not happen to me" were also reported. Additional ways to distance one-self comprised accepting that even the best cannot solve every problem. There were also descriptions of efforts to rationalize one's own decisions or to convince oneself that one did what was morally right in the situation (i.e. "No one was innocent", "They knew what they got themselves into", "I had no choice" "I acted

out of self-defence", "It will be alright in the long-run", "They have got themselves to blame", "The patient chose him-/herself", "It is better to die than to suffer brain damage" etc.). "I think that there is a great risk of ending up in a negative spiral… if you start to think. I think that it is important that one convinces oneself in one way or another" [the police]. Strategies additionally involved objectifying others like, for example, to view the adversary as someone one should indeed combat or to swear over criminals.

Well, yes… there was something that I did not reflect upon then… what was in my head was to simply "Kill those bastards!" […] it helped me to distance myself from the outside a bit. It was done through… well, the fear and the hatred made it easier for me [the military].

Further ways of emotional distancing included terminating deployment, to change for a less patient-related role at work, to repress and shut off as one got home from work, to hand over cases to other authorities or to avoid situations that might trigger negative emotions. There were also reports of how one became tougher, colder or stayed indifferent. "You have to shut off when you drive home from work and reconnect when you return. You cannot wear your rucksack all the time, it just won't work" [the emergency treatment].

Emotional reactions: The superior category individual reaction, as identified in data, is substantiated by the individual's early emotional reaction, his or her coping efforts, the perception of social support during a recovery phase, and long-term reactions.

Positive initial emotional reactions: Several informants reported having experienced early positive reactions during the acute situation. Those accounting for, thus having appraised, positive reactions in the acute situation many times took on an active role, acting in line with their own morals and standard in spite of the potential risks involved. These positive reactions ranged from being moderate to more intense in nature. A few informants noted that they were not affected negatively at all in the moment but rather experienced a kind of calm.

You might arrive at extremely chaotic places and you are in charge of six, seven cars as you are the most senior level of command at the scene… Everybody is shouting for you and the phone is ringing and… but it… then I go into a sort of calm... [the police].

There were also descriptions individuals feeling relief or happiness for having favorable outcomes. "I went around thinking to myself that day, particularly in the evening… I felt, as I said before… an extreme relief…" [the police] or "You feel relief in that moment… and it feels good and everybody is happy… but I don't think that people understand… [to drop bombs on the adversary, authors' remark]" [the military] Others gave an account of how they felt satisfied, stimulated, and challenged or how they became focused, target-oriented and/or concentrated. More strong positive emotions in terms of feeling great or super were also reported. In some cases, these emotions were characterized by surrealism, involuntary and spontaneous actions, and an insane ecstasy of joy or a sort of trance-like cognitive state. "I yearned for a rise in adrenaline level. It was addictive too. There's no question about it [the military]".

Negative initial covert emotional reactions: In contrast to the early positive reactions above, informants also accounted for moderate negative covert reactions that included unease due to an inner conflict, feelings of loneliness, sadness, disappointment, insecurity, and ambivalence besides becoming angry at oneself. Common to the informants accounting for more negative covert reactions in the acute situation was the appraisal of not having the opportunity to act, thus

assuming a passive role transgressing their own moral compass. There were additional descriptions of informants experiencing helplessness, powerlessness, hopelessness, and insufficiency while further emotions involved the individual feeling guilty or having a bad conscience. "It is when you feel that you are not sufficient for everybody… well you never really are… [the emergency treatment] or "I felt that people didn't trust me in a way…and that "Well, well, well…don't come here…!" I don't know what to say. Bad as a police man." [the police] Some reactions were stronger in nature as for example experiencing fear, mortal dread, shock, panic, despair, how one shut down, anxiety, hate and pain.

It is not an easy situation to handle. […] Sometimes I panic. Often it is not with regard to patients because that is working well. I worked for so many years so I have found my ways of handling that. But when it comes to questions related to organization I sometimes panic. I find that to be really difficult [the emergency treatment].

Some reported that they got scared for not reacting at all. Further initial negative covert reactions were more cognitive in nature in terms of experiencing strange thoughts, losing the overall picture, getting caught in the task assignment, having difficulties grasping the situation or forgetting things.

Negative initial overt emotional reaction: Negative overt reactions in the acute situation were behaviorally directed outwards and involved responses like losing one's patience, becoming irascible, frustrated, irritated or angry towards others. Similar to those informants reporting negative covert reactions, these individuals appraised the situation as not having the opportunity to act with regard to their own morals and standards. Additional reactions comprised of talking bad about others or intervening in things one should not. "What happens is that one goes around talking rubbish instead. "Well, they did this, it was really bad and they don't know what is going on at all, they are worthless" [the police]. Negative overt reactions such as becoming provocative and judgmental towards others or experiencing feelings of vindictiveness and revengefulness were also reported.

Continued everyday living

This refers to the individual's appraisal of their everyday life and how they have appraised and coped with uplifts and hassles experienced in everyday life. The data indicated that these individual subjective interpretations can affect the balance between the experience of daily uplifts or hassles and influence the individual's outlook on life.

Individuals that appraised the initial situation as impressionable, that used problem-focused coping as the main strategy, or that perceived themselves to have social support were more apt to experience uplifts, thus positive long-term reactions. On the other hand, those that experienced that they could not do what was morally correct in the acute situation, who refrained to use emotional distancing as a means of coping, and perceived lack of social support were more prone to experience hassles in everyday life and be negatively affected in the long run.

Uplifts: Uplifts that were identified within the data were seen as a more general positive approach towards life, such as valuing one's own life more (often in comparison to the misery of the organizations' target audiences) in terms of family life. Ordinary problems were told to have become trivialities and one feels more at peace.

I have noticed that I don't care about little things anymore. I don't put as much energy into such things. Some people find it hard that the bus is five minutes late…that's not a problem for me. I'm just glad to be alive. And I know that other people's lives are so much worse than mine [the military].

There were also descriptions of how one has learnt, developed, become more motivated, more attentive, more prudent, more orderly, and how one has grown both as a person and in the occupational role. Informants gave examples on new outlooks on existential questions concerning life and death, justice, the meaning of life, and how one trust oneself more. In general, the data reflected that these individuals had a *positive outlook on life.*

Hassles: In contrast to a generally more positive outlook on life, there were also reactions illustrating more perceived hassles in everyday life. For example, there were descriptions of feeling frustrated, provoked, irritated, angry, and being less tolerant towards people that complain of "irrelevant" problems. Some informants described lack of motivation on ordinary days, how they have become doubtful, pessimistic, sad, and insecure in their professional roles. Other reactions involved feelings of fear towards life in general, and having become paranoid and protective towards family members in particular.

Additionally, some informants have experienced difficulties in readapting to ordinary day of life while there also were reports on how one has become more reserved, cynical, cold, disillusioned, and indifferent. "If you ask my wife, I'm sure that she would say that I have changed a lot lately. I'm probably more reserved, uncommunicative, and quick-tempered sometimes… in a different way than before [the emergency treatment]".

I probably come through as much more cynical today. It's like… when I like compare the troubles and pains of those living in [name of country, authors' remark], and what problems are discussed here at home, then I feel that my tolerance has shrunken… about what's OK to complain about… [the military]

Thus, the data indicated that the hassles the individuals endured as well as their appraisal and coping strategies, led these individuals to experience a more *negative outlook on life.*

Long-term health and function

Positive long-term reactions: Positive long-term reactions comprise psychological well-being and having a more positive outlook on life.

Psychological well-being: Most of the informants reported positive responses in a long-term perspective. For example, some described how they do not, or no longer, experience any regrets or bad conscience with regard to their own actions in acute situations involving moral stressors, that they feel honorable for having participated, and that they are glad and proud to have acted in what they perceive to have been a "morally correct" way. Many accounted for feeling happy and getting on well at work. Other statements comprised of feeling good when recapturing stressful situations or that one is proud of one's own achievements.

Negative long-term reactions: Negative long-term reactions were identified as negative psychological well-being and having a more negative out-look on life.

Negative psychological well-being: Negative reactions in the long run were asserted to concern regretting decisions, blaming oneself for one's own actions, questioning oneself, sometimes resulting in guilt, bad conscience, and lack of self-confidence. Thus, when looking back on these situations, negative thoughts were associated rather than joy and pride. There were also reports of anxiety, difficulties to sleep or how

one ponders, ruminates or dwells on the same string repeatedly over and over again.

Yes, it manifests itself in various ways. You wake up early in the morning… fall asleep in a good way, have always done, but wake up, everything spins in your head. Yes, it spins in my head. So it is as if I start the work day as soon as I wake up… and there are consequences, so I get up and have an early breakfast and maybe do some physical training, but most of the time I sit down here and work in the morning, so I can be here around fiveish… that's too early, I'm sure it is… [the emergency treatment]

It is hard to let it go, it is. Like… things like that I do bring home with me, wondering… "What if something happens now?" and "Could I have done anything differently?" Even if you know that you could not have done more, even though you would have wanted to. It is hard to just let it go [the military].

Smells, emotions, and negative memories that were present in the acute situation were reported to recur.

Discussion

The aim of this study was to gain a deeper understanding of individual reaction patterns among professional first responders during and after acute situations that involve moral stressors in combination with cumulative stress. The interaction of these sources of stress appears to be related to the subjective appraisal processes of the first responders. Thus, a given episode with a moral stressor as described above will, in the individual case, affect the frequency and the intensity of perceived daily hassles and uplifts with varying personal significance in response to the event. In a favorable scenario, the meaning of hassles is reduced and the value of uplifts is increased. In an unfavorable scenario, the picture is the opposite. These appraisal processes will in turn affect the individual's early emotional reaction to the event, his or her coping efforts and perception of social support during a recovery phase and potential long-term reactions.

As the obtained results on coping strategies, social support and reactions are in line with earlier stress research, our main findings on hassles and uplifts will now be further elaborated. The emphasis on subjective appraisal processes implies that acute, stressful events that involve moral stressors are not only viewed as environmental happenings, since there is also a suggested personal contribution to their significance. This means that hassles and uplifts are regarded as consequences of appraisal processes and not as antecedent stimulus conditions. Thus, the model implies that there are usually two sets of operating antecedent conditions, one environmental and one within the person. This reasoning draws heavily [27].

The model also suggests that the casual relationship between the appraisal of daily hassles and uplifts and the individual reactions is continually bidirectional. This means that it is difficult to disentangle a hassle from a negative emotional reaction and an uplift from a positive reaction. This should not be regarded as a sign of circularity or inaccurate definitions, but as an indication that the model should be regarded as an analytical tool. In reality these largely intra-psychic phenomena are intertwined but separating them like this may have a theoretical value and be of help when practical interventions such as when rehabilitation efforts are designed.

Research in general population samples suggests that repetitions of appraising daily events as disturbing, creating an accumulating body of micro stress reactions, might be even more harmful and difficult to

cope with than the traumatic stress reactions that tend to arise during the most acute phase of a stressful situation [27-31]. Thus, the findings of this study contribute by pointing to the potential importance of daily uplifts and hassles in terms of mitigating the subjective inner meaning a person ascribes to an event involving a moral stressor and the ensuing reactions. These findings may open up new possibilities to prevent and/or reduce negative long-term reactions as most people can learn to cognitively appraise everyday events differently and to cope with them more effectively.

Obviously, in reality there are a number of potential deviations from the model we have presented. Principally, the sources of these can be found within individuals, in the situational context, and in the person-situated interaction of a particular case. Examples of individual-related sources of deviations include psychological resources, personality, and so forth. Examples of potential context-related sources of deviations are characteristic of moral stressors, organizational resources, missions that are impossible to solve even for the best, and so forth. As mentioned in the Results section, individual factors were not part of the interview guide in the present case. Nevertheless, personal characteristics were frequently mentioned by the informants. Thus, a deeper analysis of these aspects is a suggestion for future research.

We argue that this study contributes to the scientific community by opening awareness of the narrow scope that the DSM-V and ICD-10 currently have in regards to stress reaction diagnoses. Therefore, this study contributes by highlighting the current deficiency and suggests the need for a diversity of stress reaction diagnoses and measurements in order to fully capture the range of stress reaction patterns, such as moral stress. With the heightened attention on PTSD in media and the scientific community, it is important to note that there are other stress reactions that fall outside the well-defined PTSD framework. Specifically, if our present study is compared to a PTSD stress reaction diagnostic criteria in the DSM-V, the difference can be found within criterion A: stressor. The DSM-V refers to the person being exposed to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence, while the ICD-10 states "Exceptionally threatening or catastrophic event which would cause distress in almost everybody, e.g. being in a war zone." Contrary to this, moral stressors do not require a physical threat but rather an intrinsic conflict with oneself on how to respond to a given situation from one's personal conscience and what is allowed based on norms, rules, etc. We suggest that both the DSM-V and the ICD-10 are inadequate when it comes to moral stress faced by professional first responders including complex reaction patterns; criterion A in particular. The results of this study show how acute events that evoke strong immediate and long-term reactions do not necessarily concern issues that involve life or death. Also, previous research in a military context confirms that morally injurious events can be discriminated from events that threaten life and safety [32]. Thus, from the perspective of moral stress, there is a need to broaden current diagnostic criterion or create new stress reaction diagnoses and assessment methods to capture the complexity of stress reaction patterns that fall out of the current diagnostic domains.

This study has several limitations. We do not claim to have captured all the different components of moral stress with regard to first responders in our present study. In constructing our model we were limited to data obtained from selected groups of informants. Another limitation may be the amount of time that passed between the incidents described by the informants' and conducting the interviews. However, there was no practical or financial means of having a researcher on constant stay of alert to scrutinize acute situations involving moral

stressors in the contexts studied. The accuracy of the reports of the present study is supported by the fact that the narratives were exhaustive and rich in detail. There is generally little evidence that emotional stress impairs memory. Central detail information is better retained, whereas peripheral detail information from emotional events is less well retained than their neutral counterparts [33]. We assume that this also holds true in this retrospective approach to moral stress.

Another study weakness we want to highlight is the lack of representativeness, which is inherent to the chosen qualitative method. We selected an extreme case of helping environments, but also within this area, there may be many contextual variations. Some of these variations may be profession-related. It can, for instance, be argued that the demands and tasks of acute medical personnel, military officers and police officers, are quite different. Variations can also be attributed to framing societal factors at large such as culture, public norms and history. However it is beyond the scope of this individual-level focused grounded theory study to address such issues. They are valid suggestions for future research but require a different methodological approach. The same, of course, applies to the broad field of moral stress in working life as a whole. It should also be emphasized that the concepts derived from the data are of a sensitizing rather than a definitive character, as described by [34]. In summary, the suggested model of moral stress should be viewed as preliminary. The interrelationships between the superior categories may not be fully developed, and a core variable, could not be derived from data. Possibly the use of other qualitative research methods, such as focus group interviews, could contribute to a deepened understanding.

If supported in future research, possible pragmatic benefits are that the results can serve as an in-put for education of staff in first responders' professions and organization of management routines. Improved design of emergency-type organizations and policies are other potential benefits. It is also possible that knowledge gained in maximally challenging situations could give valuable insights applicable of a broader area of work environments. Additionally, this study has shown that further research is needed, from a moral stress perspective, to broaden current diagnostic criterion and assessment methods to capture the complexity of stress reaction patterns from a moral stress perspective in order to contribute to better prevention, assessment and treatment strategies.

Acknowledgements

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