

Mapping Demands:

How to prepare police officers to cope with pandemic-specific stressors

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Abstract

Frequent and varied training of police officers is crucial to optimally prepare them for the challenges they face in their police work and allow them to cope with these demands effectively. The Horizon 2020 project "SHOTPROS" aims to develop a training program in Virtual Reality (VR) to train appropriate decision-making and acting capabilities of police officers in high-stress situations. The current COVID-19 pandemic can be considered a prime example of such a high-stress situation. Therefore, the aim of the present article is to re-analyse data from a longitudinal survey among 2567 police officers across Europe, to identify pandemic-related demands experienced by the participating officers during the first COVID-19 lockdown that can be integrated and trained in (virtual) scenario-based training to better prepare police officers for the current and potentially future pandemic outbreaks. Following the constraints-led approach to training, pandemic-related demands are categorized as task, environmental, and individual constraints

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to provide police trainers with a toolkit how to change and manipulate training scenarios according to the trainees' needs. Offering high control over training procedures, VR might be an effective tool to incorporate pandemic-related stressors into current training practices.

Keywords: COVID-19, police training, constraint-led approach, stress, virtual reality

Introduction

Police training is of utmost importance to prepare officers for the challenges they face in their police work in the field and to enable them to cope with the work demands effectively. In order to be effective as a learning setting, police training should (a) be constructively aligned with the demands in the field, and (b) provide police officers with opportunities to learn what is needed to cope with the demands. As the COVID-19 pandemic and the resulting governmental measures continue to pose unprecedented challenges on European street patrol officers, they should be able to easily transfer the skills they acquire in training into real-life situations. Recently, the longitudinal study "SHOT-COVID19", as part of the SHOTPROS project under European Union's Horizon 2020 Framework, investigated the work demands, coping resources, and stress of European street patrol officers during the first months of the COVID-19 pandemic (Frenkel et al., 2021). The aim of the present article is to re-analyse this data to identify pandemic-specific demands that can be systematically translated into police training to better prepare police officers for current (and future) pandemic-related situations in the field.

SHOTPROS: Improving performance of European police officers by developing VR enhanced training

The European Union's Horizon 2020 project SHOTPROS (2019-2022; <https://shotpros.eu/>)² aims at improving the performance of police officers through the training of decision-making and acting in Virtual Reality (VR) settings, resulting in better abilities to keep control over threatening situations and a decrease in excessive use of force occurrences with potential casualties or collateral damage. To this end, SHOTPROS investigates the influence of human factors (HFs) on the decision-making and acting (DMA) of police officers under stress and in high-risk operational situations. This knowledge enables the design of effective training guidelines for police training in DMA under stress. This will ultimately lead to the development of a HF-rooted training curriculum and a corresponding VR-solution to be able to systematically manipulate the influence of HF on police officers' stress and DMA during training in order to complement 'traditional' live simulation training.

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Policing in high-stress situations

As a first step in the identification of relevant HF that impact police officers' DMA, a total of 60 police officers and trainers participated in six workshops, one in each law enforcement agency (LEA) representing the SHOTPROS consortium (from Belgium, Germany, the Netherlands, Romania, and Sweden). During each workshop, one focus group was dedicated to the exploration of factors that participants considered to have a (negative) influence on their stress levels and their DMA capabilities during operational situations.

Results of these focus groups showed that the stressors could be assigned to four distinct categories. The first category comprised '*contextual factors*', i.e., elements that are present within the environment or situation of the specific police intervention. Examples of such factors are threats to the officers' physical integrity, the presence of bystanders (e.g., interfering with their police work), sensory overload (e.g., through noises, smells, many visual cues), unclear circumstances, and a loss of control over the situation at hand. The second category consisted of '*organisational factors*', which are elements that are specific to their LEA organisation. Examples of organisational factors are feeling a lack of support or appreciation by colleagues or superiors, personnel deficits, different and changing rules and regulations, and lack of training. The third category comprised '*individual factors*', which are personal characteristics that differentiate between individual police officers (e.g., lacking important skills, personality, personal stressors, and physical or mental strain). The fourth category contained '*societal factors*', which addresses the fear of negative media coverage and loss of good reputation of the police as an institution or of themselves as police officers.

These four categories of factors are assumed to influence police officers' stress levels in a given situation, and as such can have an impact on the quality of their DMA capabilities and work performance.

Policing during the COVID-19 pandemic

The rapid emergence of the COVID-19 pandemic and the subsequent lockdown in the beginning of 2020 have confronted police officers all over Europe with a new and unknown challenge in real-life. During the pandemic, LEAs have played an important role in trying to minimise the transmission of the disease, securing public order and keeping communities safe (Brito et al., 2009). Simultaneously, the unprecedented strict governmental measures that had been enacted to protect citizens' health have been increasingly challenged on political, economic, and legal grounds (Mohler et al., 2020; Stogner et al., 2020). In their responsibility to enforce these measures, street patrol officers have been confronted with various novel challenges: The risk of infection as a constant threat to officers' physical integrity, changing governmental measures leading to a shift in calls

for services, numerous alterations in policing protocols, high(er) workload due to infected and quarantined officers and more frequent encounters with anxious or intransigent individuals aggravated by the fear of contagion, economic uncertainty, and isolation (Drake & Altheimer, 2020; Jennings & Perez, 2020; Stogner et al., 2020). As such, policing during the COVID-19 pandemic can be considered a 'critical police incident' (although of longer duration and larger geographical impact than usual police incidents; Jennings & Perez, 2020), requiring the officers to respond to novel, uncertain, uncontrollable, and threatening situations (Stogner et al., 2020). Therefore, the pandemic constitutes an opportunity to (1) investigate the influence of the above-mentioned four categories of factors (contextual, organizational, personal and societal) on police officers' stress, to (2) identify perceived coping resources to meet pandemic-specific demands, and (3) to translate these results into specific recommendations for police training. To this end, a three-wave longitudinal study was conducted with police officers from various European countries reporting on their work stressors, coping resources and perceived stress levels during the first months of the COVID-19 pandemic (Frenkel et al., 2021).

Methodology of the study

The observational study was conducted online at four measurement points throughout an 11-week period during the COVID-19 pandemic from March 27, 2020 to June 5, 2020. Participating LEAs were recruited through the SHOTPROS consortium and its networks. To examine a large, diverse sample of officers, these LEAs widely distributed the survey online through mailing lists. In a longitudinal approach, each LEA participated at three measurement points (except the Dutch LEA that participated once) with a survey period of one week and two weeks in between survey periods. Due to internal approval procedures, LEAs started the online survey at different measurement points.

The sample consisted of 2567 police officers from six participating LEAs in five different countries, with Austria ($n = 1415$; 55%) achieving the highest number of participants, followed by Germany ($n = 711$; 28%), Switzerland ($n = 325$; 13%), the Netherlands ($n = 76$; 3%) and Spain ($n = 40$; 1%). In total, 3455 questionnaires were completed with an average of 1.35 ($SD = 0.65$) questionnaires per participant. The average participant was 36.69 years old ($SD = 11.64$) and had 17.22 years of work experience ($SD = 12.69$). Seventy-seven percent of the participating officers were male and 60% of participants were working in field service. The Social and Societal Ethics Committee of the KU Leuven provided ethical approval for this study (approval number: G-2019 081712). Informed consent was obtained from the participating officers. Participants received no financial compensation.

In a mixed method approach, the survey included quantitative and qualitative items. We repeatedly assessed police officers' perceived stress and fatigue (both measured with

a single item) and mood (subscales: *valence, energy, calmness*; Wilhelm & Schoebi, 2007), which collectively represented the strain they experienced (as confirmed by a Principal Component Analysis). To account for the nested data structure, three-level growth curve models assessed changes in strain and its relation to appraisal of the COVID-19 pandemic (as *stressful, challenging, controllable, and threatening*), emotion regulation (subscales: *adaptive and maladaptive emotion regulation*; Brans et al., 2013), preparedness through training (measured with a single item) as well as police officers' sex and years of working experience. To add context to the findings and to explore lived experiences, free response answers about officers' main tasks at work, private and work stressors, crisis and preventive measures taken by the organisation, as well as wishes for support were analyzed using the deductive category assignment in the qualitative content analysis according to Mayring (2014). For a more detailed description of the methodology, see Frenkel et al. (2021).

Summary of the initial results of the study

The final model included three levels (Level 1: country, Level 2: participant, Level 3: measurement point), with sex and work experience as Level 2 predictors and weeks since lockdown, appraisal of the COVID-19 pandemic, adaptive and maladaptive emotion regulation and preparedness as Level 1 predictors. The intraclass correlation of the final model was 0.72, meaning that 28% of the variation in strain occurred within each individual, 66% between individuals and only 6% between countries. This finding suggests that police officers' strain is rather determined by interindividual differences (i.e., personal factors) than by differences between countries or LEAs (i.e., organizational and societal factors). On the first day of the lockdown, an average police officer had a rather medium strain level of 3.56 on a scale ranging from 1 to 7 ($SE = 0.16, p < .001$). A slight decrease (Estimate = $-0.02, SE = 0.01, p < .01$) of the strain level by 0.24 over three months after the lockdown was observed. Since officers generally experience elevated stress levels (Allison et al., 2019; Giessing et al., 2020; Planche et al., 2019; Violanti et al., 2016) and changes in strain are rather small, it seems plausible to assume that the average officer was only mildly affected by the pandemic, although our data allows no direct comparison with pre-pandemic stress levels. Nevertheless, given the large individual differences in strain, Level 2 and Level 3 predictors can help to identify the participants that are at risk to show high levels of strain. Being female (Estimate = $0.22, SE = 0.06, p < .001$), having less work experience than the average 17 years (Estimate = $0.01, SE < 0.01, p < .01$), feeling unprepared (Estimate = $0.10, SE = 0.01, p < .001$), appraising the pandemic to be stressful (Estimate = $0.46, SE = 0.06, p < .001$), and using maladaptive emotion regulation strategies (i.e., rumination and suppression; Estimate = $0.16, SE = 0.03, p < .001$) were significantly associated with strain, predicting higher strain levels.

Thus, the quantitative analysis demonstrated that personal factors, i.e., sex, appraisal of the pandemic, and emotion regulation, significantly contributed to police officers' stress. From the qualitative analysis of the officers' free response answers, two contextual factors emerged as major work stressors: risk of infection as a threat to the officers' integrity and information overload. While these findings are in line with theories that conceptualize stress as a person-environment transaction (Lazarus & Folkman, 1983), our analyses revealed that also organizational and societal factors contribute to the perception of work stressors. For instance, the risk of infection was perceived to be a result of or exaggerated by the lack of availability of personal protection equipment within the organization (i.e., organisational factor). Concerning the information overload, the daily changing governmental regulations and inadequate communication within the organization have been mentioned as a societal and organisational factor, respectively.

At the same time, police officers' reports on effective crisis measures and wishes for support showed that these HF can also be interpreted in terms of protective factors. As an organisational protective factor targeted at the risk of infection, officers suggested that LEAs should logistically prepare for (future) pandemics through stockpiling personal protection equipment, having plans for personnel adjustments (e.g., 50/50 work plan, remote work), and altering policing procedures (e.g., limiting public access to police stations). To address the information overload, governments can reduce police work stress during pandemics on a societal level by legislating unambiguous regulations and effectively communicate them through the media to increase public compliance.

Importantly, both the quantitative and qualitative results of the present study have highlighted training and work experience as important protective HF. It is impossible to completely remove stress from police work (during pandemics), as the experience of stress is intrinsically linked to being a police officer. While the above-mentioned practical recommendations might specifically target the perceived challenges and demands of the first lockdown, preventive (stress) training can prepare officers for both the acute and long-term impacts of pandemics on police work and any other high-stress situation. In the survey, police officers reported that they had already acquired various skills in scenario-based situational response training that proved to be effective in their police work during the pandemic: (1) the automatism of keeping sufficient distance from the police vis-à-vis as a mean of self-protection, (2) target-oriented communication, especially with upset, anxious or mentally unstable individuals, (3) the ability to make quick decisions, and (4) stress regulation in critical situations. These findings suggest that certain skills already integrated in police training curricula have indeed been utilized by the police officers during the COVID-19 pandemic. However, the transferability of skills into the field could be further increased by integrating pandemic-specific demands into police training, following a constraints-led approach for training under stress (Giessing, 2021; Giessing & Frenkel, in press; Körner & Staller, 2020b).

Integrating pandemic-specific demands into police training

The police officers' reports in the present study provide valuable insights that can be used to design (VR) training settings that are representative for the situations that officers might experience in the field during pandemics. Therefore, we have re-analysed the officers' reports on work stressors to identify concrete examples of pandemic-specific demands within the major themes of risk of infection and uncertainty of action. By systematically implementing and manipulating demands in simulation training that are representative of these stressors, police training allows for the development and refinement of individual functional behaviors that help a police officer to cope with these stressors in the field.

From the perspective of police trainers, the demands can systematically be implemented and manipulated using a pedagogical concept called constraints-led approach (Koerner & Staller, 2020a, 2020b). This approach builds on the premise that human behaviour is constraints-led, conditioned by the interplay of individual and environmental factors, which act as constraints (Renshaw & Chow, 2019; Torrents et al., 2020). It distinguishes between three categories of constraints that can be purposefully manipulated by the police trainer in order to allow trainees to experience the demands that they would also encounter in the field and to perform functional solutions to the demands posed. The three categories are: (1) task constraints, (2) environmental constraints and (3) individual constraints.

Task constraints refer to the specific factual and operational structure of the task, which is reflected in service regulations and guidelines. Pandemic-specific task constraints involve the application (and knowledge) of current COVID-19-specific regulations and operating under changing and recently implemented guidelines and procedures.

Environmental constraints include changing ambient conditions such as temperature, the spatial situation, the nature of the ground, the presence of people, and objects or light conditions. The current results show that pandemic-specific environmental constraints are (a) policing in confined spaces where the risk of infection is higher and (b) interacting with individuals that have specific characteristics or display specific behaviours. These include the obvious display of COVID-19 symptoms, being part of a COVID-19 risk group, the noncompliance with and/or constant and repeated violation of the COVID-19 specific regulations (e.g., not wearing face masks or maintaining physical distance).

Finally, *individual constraints* refer to individual prerequisites of the police officer. On the one hand, individual constraints are of a structural nature that is relatively constant and less variable, such as body size or weight. On the other hand, they include situational initial states such as the motivation, intentions, or emotional states, that is, factors that can

change from one moment to the next within persons. Concerning the pandemic-specific stressors, constant individual constraints involve personal protection equipment (including face masks) that must be worn on duty and during social interactions. Police officers need to develop adaptive solutions to communicate and interact with citizens under these constraints. Variable constraints involve (a) increased anxiety or concerns when dispatching to a call of service due to prior information about the involvement of (suspected) COVID-19 positive individuals and (b) potentially depleted resources due to a high number of calls for service without recovery.

The constraints-led approach allows learners to adopt functional behaviour through cleverly designed and manipulated learning tasks that simulate the demands in the field. Such learning tasks encompass a broad range of training activities ranging from solo activities over one-on-one partner simulations to complex scenarios. Concerning complex scenarios, police officers may be subjected to either unprecedented scenarios, such as the enforcement of restrictions on common behaviours (e.g., controlling quarantine, disbanding of small groups, banning civilians from public spaces), spitting attacks as hazardous behaviour of assailants, and navigating through larger groups (potentially during riots) while maintaining physical distance, or to familiar scenarios, such as domestic violence, identity checks, or vehicle controls which have been impacted by the COVID-19 pandemic and the resulting public health measures and may as such be adapted by integrating pandemic-specific constraints. As an example of a complex scenario, trainees may respond to a domestic violence call at a 60 square meter apartment involving several individuals. This situation already provides the frame for various possible stressors for police officers: There is a confined space to keep distance and a limited space to interrogate the involved parties separately. Following the constraints-led approach, additional stressors can be embedded to the scenario based on the learner's skill level: Facial masks are worn by all involved persons, leading to a loss of information due to the inability to read facial expressions, or masks are not worn, increasing the perceived risk of infection. The perceived risk of infection can be further increased by providing prior information about an involved person being COVID-19 positive. On top of that, the involved persons might display an unwillingness to comply with social distancing rules, resulting in a high initial potential for aggression (and as such for close contact situations).

VR offers a particular opportunity to implement the concept of the constraint-led approach (Giessing, 2021). A major advantage of VR training is the higher control over training procedures (e.g., order of events, level of complexity, risk mitigation) compared to traditional police training (Jaspaert & Vervaeke, 2020; Murtinger et al.). Police trainers can configure scenarios according to the needs of the trainees and training aims. As such, VR training offers a great variability in training scenarios for a range of situations. It allows for the introduction of a wide range of examples and permutations of situation-specific (pandemic-related) conditions, which are often very difficult to include in traditional and/

or real-life training due to practical (e.g., budget, logistics) or ethical (e.g., too dangerous for trainees or actors in the scenarios) reasons. Through this variability, trainees are encouraged to explore and train individualized strategies and functional problem solutions to cope with the specific demands (Körner & Staller, 2020a, 2020b).

Besides letting learners explore possible solutions and functional behaviour through representatively designed and constrained learning tasks, police trainers may also proactively provide options for functional behaviour if this is wanted and/or needed by the learners (Körner et al., 2020). These may include verbal communication skills, defence behaviour against spitting attacks and maintaining physical distance throughout the interaction. Besides providing opportunities for learning for the job, police training might also teach skills that allow for *learning on the job*. This refers to coping with - and learning from - demands in the field without prior acclimatisation to the demands officers are subjected to. The current results suggest that learning emotion regulation strategies might prove especially useful to maintain performance in high-stress situations (Giessing et al., 2021, e.g., mindfulness-based approaches, Giessing et al., 2019; Landman et al., 2016).

Summary and conclusion

Although overall officers seemed to tolerate the stress experienced during the first lockdown of the COVID-19 pandemic relatively well, the large inter-individual variance in strain indicated that female officers, officers with less work experience, officers who feel unprepared or engage in maladaptive emotion regulation are at risk to experience severe pandemic-related work stress. Given the persistence of the pandemic, LEAs are required to implement long-term strategies to better prepare (vulnerable) officers to cope with pandemic-specific work demands. Both our quantitative and qualitative results have highlighted that participants perceived their training in self-protection, target-oriented communication, decision-making, and stress regulation as effective coping resources during the pandemic. To increase the transferability of these skills into the field, police trainers should design training settings that are representative for pandemic-specific demands in the field by purposefully manipulating individual, environmental and task constraints. Based on the re-analysis of officers' reports about pandemic-related work stressors, we identified a set of such constraints that can be incorporated in unprecedented or familiar training scenarios, in order to better prepare police officers for the demands that they would encounter during pandemic-related situations. Offering high control over training procedures, VR is a prime tool for frequent and varied scenario-based training to better prepare for the current and potentially future pandemic outbreaks and other high-stress situations that do not occur frequently, but can have disastrous consequences if not dealt with appropriately (e.g., CBRNe-disasters; Murtinger et al., 2021). VR allows for the introduction of a wide range of situation-specific stressors that officers may encounter and

should maximally be prepared for, which are often very difficult to include in traditional and/or real-life training due to practical (e.g., budget, logistics) or ethical (e.g., too dangerous for trainees or actors in the scenarios) reasons. The project SHOTPROS is currently working on the development of a VR training solution to facilitate the training of police officers' DMA skills in stressful and/or high-risk situations, such as the COVID-19 pandemic.

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