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YaHaLOM: A Rapid Intervention for Acute Stress Reactions in High-Risk Occupations

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ABSTRACT

While previous studies have examined the long-term mental health consequences of exposure to traumatic events in the military, few studies have focused on acute stress reactions (ASRs) during the mission itself. The present paper describes the development is a novel peer-based intervention created by the Israel Defense Forces (IDF) for use in high-stress contexts (known as the Hebrew acronym "YaHaLOM"). Following an overview of diagnostic and clinical considerations, we review the potential frameworks for developing YaHaLOM, detail the five steps of the intervention, describe implementation of YaHaLOM training in the IDF, and review examples of YaHaLOM utilization.

Imagine, you are part of a small team that has been tasked with rescuing an injured soldier. You and your team approach the scene, and suddenly there is a barrage of gunfire. One of your team members freezes, overwhelmed by fear, leaving himself exposed to danger and impeding your ability to reach the injured soldier.

This scenario is an example of how personnel in high-risk occupations such as the military, firefighting, and policing need to be ready to address not only the task at hand but also the reactions of their fellow team members. Life-threatening situations are an inevitable part of high-risk occupations and have been the subject of a great deal of study (e.g., Becker et al., 2009; Kimbrel et al., 2011; Klimley, Van Hasselt, & Stripling, 2018; Osório et al., 2018; Varker et al., 2018). Few studies, however, have considered the impact of traumatic exposure on the mental health and functioning of personnel during the mission itself.

Like in the scenario above, a team member may find himself acutely stressed and emotionally overwhelmed. This acute stress may temporarily lead the individual to exhibit poor judgment and decision making, engage in reckless behavior inconsistent with operational requirements, and function ineffectively (Shields, Sazma, & Yonelinas, 2016). This incapacitation has the potential to magnify the danger already present, putting the individual and his or her team in further jeopardy (Nash & Watson, 2012). Yet despite

the need for an effective method to immediately return this acutely stressed individual to functioning, there have been no on-scene interventions developed for these kinds of high-pressure situations. In the scenario above, knowing how to manage the acutely stressed team member quickly and effectively might make the difference between life and death.

The present paper proposes a novel program of intervention for use with individuals who are responsible for performing missions in high-stress contexts. The intervention was originally developed for military units, given the risk for exposure to traumatic events during combat (King, King, Foy, Keane, & Fairbank, 1999). Indeed, many accounts of psychological breakdowns during combat attest to this reality (e.g., Elder & Clipp, 1989; Marshall, 1947; Junger, 2010). Although the examples provided here are from the military, we believe the same technique can be used with any team member working in a high-risk occupation.

Following an overview of relevant diagnostic and clinical considerations, we describe the importance of occupational culture in shaping a relevant intervention for acute stress. In addition, we review the potential frameworks for developing such an intervention, and introduce a rapid peer-based intervention called by the Hebrew acronym YaHaLOM, that was developed by the Mental Health Department of the IDF. After describing

the *YaHaLOM* procedure, we conclude with a description of the implementation of *YaHaLOM* and provide case examples of how this intervention has been applied in the context of real-world missions.

Diagnostic and clinical considerations

According to the International Classification of Diseases (ICD-10; World Health Organization [WHO], 1992), an ASR is defined by polymorphic and unstable anxiety symptoms. These symptoms usually appear immediately, within minutes of a catastrophic event and are accompanied by noticeable autonomic arousal, resulting in cognitive and somatic disruptions. An ASR typically resolves itself quickly, from a span of hours to two to three days.

In the U.S. military, Combat Stress Reaction (CSR) and Combat and Operational Stress Reaction (COSR; U.S. Department of Defense, 2013) are terms that essentially describe an ASR; however, in the case of CSR and COSR, these symptoms are specific to the military context (Department of Veterans Affairs and Department of Defense, 2017) and include functional impairment (e.g., Isserlin, Zerach, & Solomon, 2008).

Whether an ASR, CSR, or COSR, the reaction is considered non-pathological and is expected to be transient. Although normally a non-pathological response would not necessarily be the target of intervention, given the potential for danger to the individual and team, an ASR in a high-risk occupational context warrants intervention. In addition, the individual experiencing an ASR is likely to be in significant emotional distress. Furthermore, it is unclear the degree to which individuals who experience an ASR may be at greater risk for subsequent psychopathology following the end of the mission. As discussed below, there is reason to suggest that the presence of an ASR may impact the adjustment trajectory of the affected individual.

Interestingly, while ASRs are listed in the ICD-10 (WHO, 1992), ASRs (and CSRs) are not present in the Diagnostic and Statistical Manual for Mental Disorders, 5th Edition (DSM-5; American Psychiatric Association [APA], 2013). Instead, the DSM-5 contains two distinct but related trauma disorders: acute stress disorder (ASD) and posttraumatic stress disorder (PTSD). Unlike ASR, which can be diagnosed immediately at the scene based on observation of behavior, the ASD diagnosis requires clinical assessment at least three days following the event. Symptoms of ASD include a persistent clinical picture characterized by intrusion, avoidance, arousal, negative mood, and dissociation

(APA, 2013). Unlike ASR, ASD is considered a mental health disorder and includes criteria of significant impairment in everyday functioning. PTSD, according to the DSM-5 (APA, 2013), is a psychiatric condition associated with four clusters of symptoms (i.e., intrusion, avoidance, negative alterations in cognitions and mood, and hyper-arousal) that last at least 30 days. While the ICD-10 (WHO, 1992) diagnosis differs somewhat terms of symptom picture and time course, both diagnostic criteria describe a protracted period of symptoms and significant social and occupational impairment. Thus, PTSD differs from ASR based on symptom picture and time course.

Taken together, there appears to be a time continuum such that ASR can occur in the immediate context of the event, ASD can occur in the first few days or weeks after the event, and PTSD can occur after the first month. It may also be that experiencing one diagnostic category may place an individual at greater risk for the development of a subsequent diagnosis. For example, research has found that ASD is associated with a greater likelihood of developing PTSD (Bryant, Creamer, O'Donnell, Silove, & Mcfarlane, 2011; Dai et al., 2018). Nevertheless, it is unclear the degree to which ASR increases the likelihood of PTSD. While no study has examined the link between ASR in the midst of a high-stress event and subsequent adjustment, Solomon and her team have demonstrated the association between CSR assessed and treated following a combat-related event and later PTSD (Solomon, Shklar, & Mikulincer, 2005; Solomon, Weisenberg, Schwarzwald, & Mikulincer, 1987; Solomon & Mikulincer, 1987). These results suggest that ASR may place individuals at risk for subsequent mental health problems, although no studies have specifically drawn this link, perhaps because such studies are difficult to conduct (Dobson, 2010).

Interestingly, Solomon and colleagues (Solomon et al., 2005) also found that 59% of soldiers with CSR did not go on to develop PTSD, suggesting that other factors influence adjustment. Perhaps there is a "window of opportunity" (p. 44) during the period of acute stress that can be leveraged to influence the trajectory of individual mental health (Zohar, Sonnino, Juven-Wetzler, & Cohen, 2009). Any intervention designed to address this window of opportunity should be consistent with the unique culture of high-risk occupations.

Occupational culture

To our knowledge, there has been no systematic procedure for team members in high-risk occupations

regarding management of ASR symptoms during the mission itself. Although we do note that the U.S. Marine Corps program on Combat Operational Stress First Aid (Navy & Corps, 2010) provides general guidance for Marines should they encounter an individual experiencing combat or operational stress. This guidance is relatively general but includes recommendations such as moving out of the line of fire and calming the individual.

In contrast, guidelines such as those in the U.S. Army's Combat and Operational Stress Control program (Brusher, 2007), traditionally emphasize management of symptoms by clinical providers in formal care settings. Such settings may differ in terms of care options (e.g., a forward operating base, medical treatment facility), but they are similar in that care is provided in a separate geographic location and temporally apart from the mission-related trauma. This distance allows for the operation of a range of interventions, including Psychological First Aid (PFA; National Child Traumatic Stress Network & National Center for PTSD, 2006), Combat Operational Stress First Aid (COSFA; Nash, Westphal, Watson, & Litz, 2010), and other possible interventions as recommended by the Department of Veterans Affairs and the Department of Defense clinical practice guideline for the management of PTSD and ASD (2017), but for those individuals who experience ASR in the context of a mission-related event, no specific intervention is available.

Ideally, such an intervention would likely need to be delivered by a peer. Even if a provider could be assigned to the battlefield, there is no way of knowing where, when and in which squad an ASR would occur. Given that it is not feasible to provide every squad with a mental health provider, fellow unit members would need to provide such an intervention instead. Indeed, relying on unit members to intervene is consistent with the military's Tactical Combat Casualty Care guidance, in which unit members are expected to provide life-saving assistance on the battlefield before the casualty is transported for further medical care (Butler, 2017).

Not only is relying on team members to address ASR a practical solution, but it is also consistent with the culture of the military and that of many other high-risk occupations (Adler & Castro, 2013). In these occupations, the team is typically paramount. Team members depend on one another to perform their mission and for their very survival. As part of the psychological contract associated with these kinds of occupations, individuals expect that they will not

abandon another team member but will instead go to great lengths to protect one another. Individuals are willing to place themselves at risk because they know that their team members will, in turn, protect them and provide help in the event that they are unable to return to safety. For example, one of the 10 military values in the IDF is a comradeship (IDF, 2000). Soldiers vow that they will always provide assistance to a buddy in need even if it demands putting themselves in jeopardy. Furthermore, taking care of fellow unit members promotes a sense of belonging and connection that is an inherent part of high-risk occupational cultures. Thus, an intervention focused on ASR during a mission-related event would be wise to leverage the underlying expectation that team members are there to support one another.

In order to bridge this gap between a need to address ASRs and the lack of available interventions, in 2013, the Mental Health Department of the IDF created an interdisciplinary team of experts to develop the *Magen* [Shield] program (Svetlitzky, Peretz, Ginat, & Fruchter, 2013). Each of these experts had served in the military and been deployed with combat units. This background enabled the team to develop an intervention designed for real-world application. The primary goal of the program was to create a rapid intervention for ASR. Consistent with the PIE (Artiss, 1963; Salmon, 1917) principles that have served as the bedrock for frontline psychiatry for a century, this intervention needed to be delivered close to the event (i.e. Proximity), quickly (i.e. Immediacy), with the expectation that the individual will return to functioning (i.e. Expectancy).

The *Magen* team identified four guiding principles. First, the approach needed to be consistent with research evidence regarding acute stress. While there is a debate about the evidence supporting the PIE principles (e.g., Russell & Figley, 2017a; 2017b), we turned to research on the physiology of acute stress. Second, the approach needed to integrate concepts that had inherent cultural meaning, such as immediate return to functioning, commitment to mission, and social support. Third, the approach needed be simple enough to be delivered by nonprofessionals. Finally, the approach needed to be practical for rapid delivery in a high-stress context. These principles were used to assess existing candidate frameworks and how these frameworks might need to be adapted for the high-risk occupational context.

PFA and the SIX Cs framework

In developing an immediate intervention for ASRs, two intervention models were considered. First, we

considered PFA, one of the most accepted interventions for the immediate aftermath of a traumatic event and recommended by the WHO (National Child Traumatic Stress Network & National Center for PTSD, 2006). PFA is designed for the period *following* trauma and provides an approach that facilitates a natural recovery process, using key concepts such as unobtrusive care, compassionate support, and encouragement, described as "watchful waiting" by the UK's National Collaborating Centre for Mental Health (2005, p.18). PFA is based on work by Hobfoll et al. (2007) that suggests the main goals for early intervention should be to provide feelings of safety, calm, self-efficacy, community efficacy, connectedness, and hope. While such dimensions are associated with healthier adjustment, there is a lack of research on the efficacy of PFA (Bisson & Lewis, 2009; Dieltjens, Moonens, Van-Praet, De-Buck, & Vandekerckhove, 2014). Nevertheless, PFA is considered "best practice" for nonprofessional first responders (Phillips & Kane, 2006). While this approach may fit contexts such as natural disasters, accidents, and interpersonal violence, PFA is not likely to fit an environment of persistent danger that requires an individual and team to remain highly functional in order to complete the mission successfully and survive.

Thus, we considered the SIX Cs model as well. The SIX Cs model (Farchi et al., 2018) is a variant of PFA that emphasizes rapid recovery. The fundamental assumption of the SIX Cs is that acute stress is a sign of hyper-activation of the amygdala, the part of the brain responsible for the response and memory of emotions, especially fear. Hyperactivation of the amygdala prompts the brain stem to release sympathetic adrenergic catecholamines, norepinephrine, and epinephrine (Tsigos & Chrousos, 2002), that in turn result in a series of physiological changes (e.g., increased heart rate, blood pressure, respiration) (Vinik, Maser, & Ziegler, 2011). Amygdala hyper-activation also inhibits executive functioning of the prefrontal cortex (Taylor et al., 2008), which is normally responsible for exerting a sense of control that can prevent feelings of helplessness (Amat et al., 2005). In this state, the individual becomes emotionally overwhelmed, and the individual is left with a profound sense of helplessness. The goal of SIX Cs is to counter this sense of helplessness and amygdala hyper-activation by encouraging a cognitive response (Ironside et al., 2019) through simple communication, increasing an individual's sense of active coping, and reinforcing the concept that the individual is not alone.

The SIX Cs consist of five core elements: (1) Cognitive Communication, (2) Challenge, (3) Control, (4) Commitment, and (5) Continuity. These elements can be converted into potential actions to take when intervening in the case of acute stress. *Cognitive communication* involves the use of language to focus individuals on cognitive, rather than emotional, processing. For example, rather than emphasize descriptions of their anxiety, they can be told that "shaking is a natural physical response to stress." Or, individuals can be asked questions that prompt them to focus on factual details such as "when did you arrive here?" *Challenge* refers to providing a series of simple, relevant, and achievable tasks that increase in complexity in order to provide individuals with opportunities to build on small successes and thereby improve their confidence. For example, individuals can be told to complete steps in sequence: "First, collect your backpack, and then see if something is missing." *Control* offers the chance for individuals to make simple decisions in order to increase their sense of personal mastery. For example, individuals can be asked "Would you want to drink some water, or do you want to check your personal belongings?" *Commitment* addresses feelings of psychological isolation that individuals may have. For example, individuals can be reassured: "I'm not going anywhere. I'm here." Finally, *Continuity* involves helping individuals regain their psychological bearing. This goal can be reached by briefly reviewing information about what has happened, what is happening now, and what will happen, and by asking individuals to reconstruct the chronological sequence of events.

Preliminary evidence shows it is feasible for SIX Cs to inform the development of an intervention; however, research findings are limited. While the SIX Cs model has not been subjected to a randomized trial, an assessment was conducted with patients at a local psychological support center who received an intervention based on the SIX Cs model following a missile attack. Surveys conducted two and four months later showed a decrease in trauma-related symptoms and an increase in self-efficacy (Farchi et al., 2018). Unfortunately, this study did not offer a comparison condition. A second study of high school students assigned to either receive training in the SIX Cs model or not suggests there may be a benefit of training in terms of perceived self-efficacy, resilience, and perceived stress over time (Farchi et al., 2018); however, the study was limited by a small sample, lack of randomization, high attrition, and potentially confounding events.

Despite the limited scientific evidence for the SIX Cs model as a whole, there is an extensive empirical and theoretical basis for the components of the model, including neurobiology (Buhle et al., 2014; Goldin, McRae, Ramel, & Gross, 2008; Lieberman et al., 2007; Taylor et al., 2008), hardiness (Eschleman, Bowling, Alarcon, & Vandenbos, 2010; Krauss et al., 2018; Sinclair, Waitsman, Oliver, & Deese, 2013; Thomassen, Hystad, Johnsen, Johnsen, & Bartone, 2018), and psychological grounding (Williams, Teasdale, Segal, & Kabat-Zinn, 2007). In addition, this model offers a potentially proactive approach to address the needs of individuals encountering acute stress scenarios. Thus, the SIX Cs model was selected by the Israeli Ministry of Health as the Israeli National PFA model. Not only has it been adopted by Israeli governmental offices, such as the Ministry of Education, Internal Security Agency, and traffic police, it has also been adapted by emergency responders (Farchi et al., 2018).

In considering PFA and SIX Cs, we contrasted the two models in terms of the four key principles we had outlined. First, both approaches were developed using evidence drawn from the literature. Second, PFA is focused on individual recovery as a natural process and encourages providing a calm and secure setting whereas the Six Cs focuses on the need for individual to return to functioning. Third, both PFA and SIX Cs provide platforms for interventions that are simple enough for delivery by nonprofessionals. Finally, although both approaches can be delivered within minutes in the immediate aftermath of a traumatic event, neither were designed for rapid delivery in the context of an event itself. Based on this comparison, the mental health department of the IDF decided to adapt the SIX Cs for intervening with ASRs during a mission-related event.

Developing *YaHaLOM*

The original SIX C model included a range of potential actions organized around five elements. These actions, as highlighted in the section on the SIX Cs model above, offered several directions for creating an intervention protocol to be used with the IDF. Given the need for a rapid, feasible, and simple intervention for use in the midst of a combat-related event, the IDF's *Magen* team conducted discussion and consultation with the original developers (Farchi et al., 2018) to select five actions to serve as the core of their ASR protocol. These actions were then structured into a set of sequential steps designed for delivery within a 30 to 60 second timeframe. These five steps spell out the Hebrew acronym *YaHaLOM*.[1]

The *YaHaLOM* steps are presented in Table 1. Each step is reviewed in terms of a specific action, description, and rationale. Examples of each step are also provided. As can be seen, the steps are straight forward, build on one another, and require increasing degrees of engagement on the part of the individual with an ASR. The first two steps of connection and commitment are designed to disrupt the individual's narrowing awareness of external stimuli. Furthermore, each step encourages greater cognitive involvement as the individuals moves from focusing their attention, to answering simple questions, and ultimately engaging in purposeful action. All steps are expected to be performed using an authoritative voice while avoiding emotion-focused language or direct attempts to calm the individual. In this way, the theoretical tenets of SIX Cs have been transformed into specific actions that nonprofessionals can learn with training.

The *YaHaLOM* training system

The initial *YaHaLOM* training system was launched in 2014 and refined over a two-year period. The technique is trained in a 60-minute module that includes a brief didactic introduction, a short video of the procedure in action, and practice time. Due to the dearth of existing ASR-related tools, *YaHaLOM* was rapidly adopted by combat units. Unit leaders, especially those who had encountered ASR cases, perceived *YaHaLOM* as a tool to help units maintain functioning even under extremely difficult circumstances. Interestingly, the training appeared not only to equip individuals with a method of response but to normalize the experience of encountering a team member with an ASR (Svetlitzky et al., 2019). By normalizing the experience, the training may have reduced anxiety in team members (e.g., Adler, Bliese, McGurk, Hoge, & Castro, 2011; McCaslin et al., 2018).

As *YaHaLOM* was launched, a number of important concerns arose regarding the technique and its implementation. For example, one concern was whether soldiers could learn the steps of *YaHaLOM*. Given that pilot training had demonstrated that soldiers learned the steps quickly, and anecdotal reports from the field showed that soldiers were using this technique, this concern was easily addressed. A second

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[1]Given the Hebrew spelling system, the 5-step intervention is written as "*YaHaLOM*" so that the term can be pronounced in English in the same way as it is pronounced in Hebrew; capitalization is used to highlight each step.

Table 1. YaHaLOM procedure.

Step	Action	Description	Rationale	Examples
(1) Ya	*Yetzirat kesher* [Connect]	• Make eye contact by moving to eye level; if necessary, remove the individual's hands from his or her face and shift the individual's face to allow for eye contact. • Call the individual's name, ask if you can be heard. • Grasp the individual firmly on the arm and ask the individual to grasp back.	Ensure that the individual pays attention using different sensory channels	"Daniel!" "Look at me!" "Do you hear me?" "I am squeezing your arm, squeeze it back!"
(2) Ha	*Hadgashat mehuyavut* [Emphasize commitment]	• Assure the individual that he or she is not alone, and that you are present.	Break through the individual's sense of isolation	"You are not alone!" "I'm with you!"
(3) L	*Levarer uvdot* [Inquire facts]	• Ask the individual simple fact-based questions. The questions may be based on five types of facts: chronology, quantity, names, current role, and current mission. The questions should have quick, short answers and be relevant to the present moment.	Deliberately engage the prefrontal cortex	"What time did you start the mission?" "How many people are in your team?" "Who is in charge of the mission?" "What was your role?"
(4) O[1]	*Vidu seder iruim* [Confirm the sequence of events]	• Describe in simple language what has happened, what is happening, and what will happen	Orient the individual using a variant of grounding	"We entered the building and there was an explosion. Now we are treating the wounded. We must to take cover in that building"
(5) M	*Matan hanhayot* [Give an order to prompt deliberate action	• Direct the individual to carry out a specific action	Prompt the individual to begin functioning, reducing the individual's sense of helplessness	"Take your weapon and cover this window!"

[1]The pronunciation of the Hebrew letter "V" changes from sound "O" to "V" and vice versa depending on its location relative to other letters. In this case, although it is spelled with a "V" it is pronounced "O".

concern was whether leaders, rather than soldiers, should be trained given that leaders are responsible for the unit. This concern was addressed by explaining that like providing care to casualties, all unit members needed to be prepared to intervene. A third concern was what to do if the intervention was not effective. In this case, it was explained that the same procedures would be in place. That is, if recovery did not spontaneously occur, the individual would be treated like any other casualty.

Other concerns identify gaps in our current knowledge. These concerns include the prevalence of ASRs, the long-term impact of ASRs on functioning, and the degree to which *YaHaLOM* is successful. Such questions could not be directly resolved and highlight the need for future work in this area in order to resolve them.

Reports from the field

As part of an effort to assess the implementation of *YaHaLOM*, mental health officers across the IDF were asked to provide feedback from the field about *YaHaLOM* usage. In most of the cases, leaders from different units were already providing reports spontaneously to the unit's mental health officer who then communicated with the first author. A summary of five reports are provided in Table 2. These reports were selected to illustrate a range of examples, with different contexts, military roles, outcomes, and challenges associated with using *YaHaLOM*. It is important to note that since the collection of examples was not part of a systematic study, it is not possible to know the degree to which the intervention can be regarded as successful. Three reports were provided immediately after the event, two were provided after a delay of several months.

Several commonalities can be identified across these reports. First, it appears that the main purpose of the *YaHaLOM* protocol was absorbed by soldiers, leaders, and mental health officers. Indeed, across all the reports *YaHaLOM* was used in the context for which it was intended. To date, there have been no reports in which *YaHaLOM* was used in the wrong context. Second, it appears that in many cases *YaHaLOM* helped return individuals to functioning during dangerous situations or missions. In each report, the ongoing situation was still dangerous, and the individuals at the scene needed to be immediately ready to respond. Third, in most cases, the intervener was able to rapidly create a connection with the affected soldier and to encourage him to return to

functioning. Interestingly, in the one example in which a connection was not specifically established, the intervention did not appear to work effectively. Fourth, the stories did not reflect complex decision making in which the individuals had difficulty identifying those with an ASR. The soldiers with an ASR were consistently identified as frozen, confused, and no longer functioning. Fifth, the intervention was able to be delivered regardless of rank or level of expertise.

Unfortunately, there are missing data from the reports. First, it is unclear how intense each event was in terms of levels of threat exposure. This intensity factor might be important in understanding who recovers quickly with the aid of *YaHaLOM* and who does not. Second, it is not clear whether all the steps of the procedure were completed according to the standard protocol. Third, it is not certain whether the intervener did anything in addition to the protocol that might have influenced the effectiveness of the intervention. Fourth, the details about the interpersonal relationship that existed between the intervener and the individual with an ASR was not reported. Not only is it unclear whether there was previous social bond that influenced the impact of *YaHaLOM*, but it was also unclear if the intervener was in position of authority relative to the individual with an ASR.

Implementing YaHaLOM

Given successful reports from the field, *YaHaLOM* training became mandatory in the ground forces of the IDF at the end of 2016, and a system for initial and refresher training was established. The first time soldiers encounter the training, it is delivered by combat lifesaver instructors during basic combat training as part of the Tactical Combat Casualty Care curriculum. Once soldiers are assigned to a unit, they are provided refresher training in *YaHaLOM* every half year. Those trainings are delivered by platoon leaders who themselves are trained by the brigade mental health officer. By periodically repeating the training, soldiers are able to maintain a high level of *YaHaLOM* preparedness.

Beyond YaHaLOM

An integrated program

The success of *YaHaLOM* has led to an expansion of the *Magen* program. Two additional intervention protocols have been developed to target the period of time when units are no longer under direct threat but are still expected to return shortly to operational activities. These protocols are designed to be

Table 2. Summary of reports on the use of YaHaLOM

Case	Context	ASR symptoms	Intervener	Consequence	Comment
1	Three soldiers set up a checkpoint in a high-threat location. A vehicle approached quickly and tried to run them over. One soldier was struck unconscious by the vehicle and was seriously wounded. One of two remaining soldiers responded by firing, but he needed help in guarding the rear, treating the injured, and calling for reinforcements. The other soldier froze. A unit member responded by applying YaHaLOM.	Frozen, confused, sweating, looked scared, failure to function	Unit member	The soldier with an ASR returned to full functioning immediately after the intervention. He remained in position, providing medical support to the wounded soldier, even after reinforcements arrived.	The intervener emphasized that the intervention went smoothly for him and that he felt confident and well-trained in the procedure.
2	During an Armored Corps exercise, a tank overturned, and a fire broke out. One of the crew members was seriously injured and needed immediate rescue. The two crew members who were not injured froze and did not function. The tank commander physically moved both soldiers to the side, away from danger, and provided YaHaLOM simultaneously to both soldiers.	Frozen, failure to function	The tank commander	Both soldiers returned to functioning and helped to rescue their friend.	YaHaLOM was adapted on the fly and provided to two soldiers at the same time. The tank commander told the team that he didn't think it would work and was surprised when it did.
3	During an intensive fight, one of the Armored Personnel Carriers was hit by an enemy missile; all soldiers in the vehicle were killed. A soldier from another vehicle who saw the event was overwhelmed, disoriented, and terrified. The NCO from the intact vehicle performed some YaHaLOM steps: he established contact with the affected soldier by calling his name and grasping his hand to prompt a response. The NCO then assured the soldier that he was not alone.	Confused, overwhelmed, detached, disoriented	NCO	Although the intervention reduced the level of distress and confusion, the Soldier was ultimately evacuated.	After evacuation, the soldier entered treatment and reported remembering the intervention. He described the sense of helplessness, confusion and detachment following the event and how the intervention brought him back to reality, reducing his level of distress.
4	300 officer cadets traveled to see a spectacular view of Jerusalem. Four of them were killed and a dozen wounded when a truck deliberately ploughed into them. Soldiers who were close to the truck tried to stop it by shooting. In the first few minutes most of the soldiers heard shouting but did not understand what was happening. To reduce the danger, the commanders tried to gather the soldiers behind shelters, but some cadets froze and failed to move to safety. The cadets included cadets who were mental health professionals and these cadets used YaHaLOM and managed to prompt the other cadets to move out of the dangerous area.	Frozen, failed to seek safety	Cadets	Returned to functioning, moved themselves to safety	Platoon leaders emphasized the contribution of the cadets with mental health backgrounds in organizing the other cadets and minimizing casualties
5	An NCO and his enlisted driver were attacked while driving a military vehicle in a high-threat area. They stopped the car, and the NCO began firing his weapon. The driver froze and was unable to drive; the NCO wanted to keep firing but someone needed to drive the vehicle. The NCO delivered an abbreviated version of YaHaLOM twice, skipping the connection and commitment phase, but the enlisted soldier did not return to functioning. The NCO had to replace him as the driver and, while driving, repeatedly asked him basic details about his military service in an effort to restore cognitive functioning. After a while, the soldier recovered and replaced the NCO as the driver.	Stunned, looked scared, sweating, shaking	NCO	Returned to functioning after a delay	It may be that the intervention did not work as expected because the intervener skipped the initial steps and did not establish a connection or emphasize his commitment. Without connection, other more cognitive steps may not result in the desired effect.

Note. NCO stands for non-commissioned officer.

conducted by leaders and address ASR consequences at both the individual and team level. At the individual level, there is now an *Advanced YaHaLOM*, which provides further intervention for individuals who do not respond initially to the basic *YaHaLOM* intervention. At the team level, there is now *MaShABiM* [Resources], which provides a type of after-action review that emphasizes coping strategies. While beyond the context of the present paper, these interventions demonstrate the degree to which the program can be extended as part of an integrated system of mental health support for high-stress occupations.

Limitations and future directions

Although *YaHaLOM* training has been implemented in the IDF, there have yet to be systematic studies of *YaHaLOM* efficacy. It would be challenging to conduct a randomized trial examining the immediate effects of implementing *YaHaLOM* because any such study would have to assess ASRs, and this phenomenon is difficult to anticipate and measure during a high-stress combat-related event. Alternatively, it may be possible to determine if training in *YaHaLOM* is effective for units when they return from the deployment.

While randomized trials still need to be completed, studies have examined the degree to which *YaHaLOM* can be effectively trained. These studies extend our knowledge on implementation. In an Israeli study, *YaHaLOM* training was associated with greater knowledge about and confidence in managing ASR casualties and was associated with fewer negative perceptions of team members experiencing an ASRs (Svetlitzky et al., 2019). These differences were detected even months after the training had been conducted. Moreover, a video supplement to the training process resulted in better training outcomes.

In a study conducted in the U.S., the *YaHaLOM* training material was adapted and the resulting iCOVER curriculum tested in a training-based context. Those soldiers trained in the technique reported high acceptance and demonstrated mastery of the steps in live-action scenarios (Adler et al., 2019). Taken together, these two studies demonstrate that the training is feasible, well accepted, and results in acquisition of training-related skills.

However, key questions still need to be addressed, including the degree to which conducting *YaHaLOM* impacts the trajectory of PTSD after development, future research is needed on the real-time performance of the *YaHaLOM* protocol, identification of boundary conditions that indicate when *YaHaLOM*

would not be appropriate, and whether *YaHaLOM* training is useful in reducing team member anxiety prior to deployment into a high-risk mission.

The rapid uptake of *YaHaLOM* speaks to the perceived need of military leaders to prepare their units to manage ASRs in the field. Indeed, the interest of other nations underscores this fact. Besides the U.S., militaries in other nations have also expressed interest in *YaHaLOM* training, and materials have been adapted by the German Armed Forces (BESSER [Better]; P. Zimmerman, personal communication, December 6, 2018).

While *YaHaLOM* was originally developed for the military, it is important to consider how this intervention may be adapted for and implemented with other high-risk occupations. High-risk occupations such as fire-fighting and policing may benefit from the training given that, like the military, they share a team-based orientation and have to operate in dangerous conditions. As illustrated in the scenario at the start of this paper, teams need to know how to respond in the event that a team member experiences an ASR. By knowing how to reduce amygdala hyperactivation, teams may be better able to address the competing and essential tasks confronting them.

In conclusion, there has been a gap in understanding how interventions can be developed to target ASR, rapidly returning individuals to functioning in the midst of a high-stress event. *YaHaLOM* represents one specific alternative. The experience with *YaHaLOM* demonstrates its acceptance and utility; future research will be needed to demonstrate efficacy, to identify limits to its effectiveness, and to assess the degree to which it may alter an individual's mental health trajectory.

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