The Effects of Acute Stress Reaction on Trauma-Related Symptoms and Relevant Factors

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Abstract. Acute Stress Reaction (ASR) and trauma can take a very serious toll on a person. It can affect their social functioning and daily life. It is important to study ASR and trauma and their associated factors. In the case of ASR, it can make a person less productive. Plus, it is not merely people who developed ASR are affected. There is also a relationship between the degree of witnessing ASR in a teammate and the probability of developing Post-Traumatic Stress Disorder (PTSD). The most effective way to regulate and mitigate the effects of ASR onset and trauma are resilience and social support, especially from friends and colleagues. Studies have found that being more socially supported leads to greater resilience, which can lead to better recovery from trauma and an increased level of well-being. People's subjective judgments and the way they handle traumatic events also influence ASR and the severity of trauma. If people are more positive about the future, the severity of trauma can be reduced. People who deal with things more positively, such as revisiting the event and accepting it positively, have a greater chance to recover from trauma. Relevant psychological training and interventions beforehand can also reduce the incidence of Acute Stress Disorder (ASD). This paper can provide some directions to future intervention research and practice for children and adults in need.

Keywords: acute stress reaction; Acute Stress Disorder; Post-Traumatic Stress Disorder; trauma.

1. Introduction

Acute Stress Reaction (ASR) and trauma can have a significant impact on a person. There are many types of traumatic events, such as accidental traumatic events, sexual violence traumatic events, war traumatic events, and so on. There are also two different types of trauma, including Type 1 and Type 2 trauma. Type 1 trauma is generally a one-time trauma that occurs in adulthood and includes Acute Stress Disorder (ASD) and Post-Traumatic Stress Disorder (PTSD). Type 2 trauma is long-lasting and widespread and cannot be healed naturally. It can occur in children as well as adults, and has complex symptoms. This article will focus on Type 1 trauma. In nowadays situation, it is more important than ever to understand how to treat trauma, what conditions it is associated with, and how to prevent and reduce trauma symptoms. With this understanding, many people in trauma-prone positions, such as paramedics, soldiers, and firefighters, will be less likely to experience trauma symptoms and more likely to recover.

ASR refers to transient emotional, physical, cognitive, or behavioral symptoms due to exposure to an event that is extremely threatening or frightening [1]. Physical reactions can be summarized as increased heart rate, rapid breathing, profuse sweating, and anxious thinking. ASRs can be thought of as a brief series of normal reactions that take place after a highly stressful or traumatic event. It is not thought of as a disorder but rather as a natural disruption of function under extreme stress. In contrast, ASD is a disorder that presents with symptoms that last for three days. The presence of an ASR does not guarantee that an ASD with PTSD will be diagnosed, and the absence of an ASR does not guarantee that an ASD with PTSD will not be diagnosed. Very limited studies have linked ASRs to subsequent illness [1].

A traumatic event is generally defined as an adverse event. It is a particular occurrence connected to actual or threatened serious bodily harm, sexual assault, or life-threatening situations. A person is considered to be traumatized when they experience or witness an event of this nature. Post-traumatic stress (PTS) is a negative reaction to trauma, and some experts consider acute PTS reactions to be a normal response to traumatic events. Countless people have experienced traumatic events, but these

reactions usually do not seriously affect their occupational or social functioning [2]. Social identity means that the individual recognizes that he or she belongs to a specific social group. Plus, he or she also recognizes that the emotional and value significance of being a member of the group can bring to him or her. How to restore social identity after a traumatic event is valued. According to the identity continuum hypothesis, when a valued social identity is compromised or destroyed by trauma, negative reactions to trauma (e.g., PTS) are exacerbated. Resilience in the face of trauma would be higher if social identity is maintained. Plus, the social identity gain hypothesis suggests that resilience in the face of trauma can come from the development of a positive and meaningful new social identity. Post-traumatic growth (PTG) corresponding to trauma-generated stress at the time is most likely to occur where existing identities are re-recognized or where new identities exist. It suggests that the ability to stimulate self-awareness renewal after trauma can be explained by the growth of social identity, creating a closer relationship with others, and making ones more meaningful [2].

Most people who react negatively to a traumatic event also change positively after the intervention of PTG. People who have gone through trauma reported self-growth to a certain extent between 30 and 80 percent. PTG varies regarding resilience and recovery in that it involves a positive shift in previous thinking that denotes a reorientation of the patient's values following the trauma rather than merely returning to a pre-traumatic condition [2]. Current research has not directly linked ASR to trauma symptoms. In addition to ASD, despite the fact that there are some studies confirming some relationship between trauma and PTSD, there is not a large amount of experimental data to support it. The main purpose of this paper is to discuss the relationship between ASR symptoms and trauma-related symptoms. This paper can provide some suggestions to future timely interventions for ASR as well as potential directions for future research.

2. The Specific Impacts of Acute Stress Response on Trauma-Related Symptoms

Experiencing ASR has the potential to make a person less productive by distracting them at work or by making them unable to concentrate. For example, after being hit by an artillery shell, a soldier may experience reactions such as inattention and unawareness of his mission. People with ASD may also be unable to concentrate for a sustained period of time. It is possible that this condition is due to the patient being distracted by the traumatic event experienced at the time and unable to focus on the job. The Acute Stress Response Scale (ASRS) was executed on the sample of 1,832 male soldiers in four tasks: earthquake rescue, social stability, altitude training, and strenuous outdoor training. During these training sessions, soldiers experienced a range of acute stress reactions. The severity of these reactions varied depending on the task, but they were primarily cognitive and emotional in nature. And reduced productivity was significantly and positively correlated with 24 symptom clusters, which include six indices: thought change, emotional response, behavioral change, physical change, psychotic symptoms, and total response index. Therefore, the degree of ASR symptoms is negatively correlated with a person's productivity. Plus, ASR mainly changes the cognitive and emotional responses of people [3].

Those soldiers who experience ASR in combat are generally experiencing a traumatic event, and they are likely to be affected by the trauma of the traumatic event. But soldiers who see their teammates with ASR are likely to be affected by their teammates as well. This is because the panic and fear displayed by a teammate with ASR is also likely to affect his teammates, resulting in the teammate being affected by the trauma afterward. The sample was divided into two groups, with those in group one being soldiers with prior service experience who were about to deploy again (176 selected) and group two being soldiers who had already served half a year of active duty (497 selected). Investigating whether they observed the presence of ASR phenomena in their teammates during motivational combat and the prevalence of PTSD. 51.7% of soldiers in sample one reported seeing a teammate with ASR, while this probability was 42.4% in sample two. The pattern of results in both samples indicated a link between visualizing ASR and screening favorably for either

subthreshold PTSD or PTSD. The severity of PTSD-related symptoms was positively associated with exposure to ASR at both the bivariate and multivariate levels [4].

3. Relevant Factors in the Effects of Acute Stress Response

3.1 The Importance of Social Support

The way someone is treated differently by others after a manager's trauma will also cause them to react differently. In the barracks, soldiers are often under strict control, but this control allows them to not have to think about what they are going to do, they will have someone else to direct them. But at the end of the war, when no one is in charge of them anymore and this coincides with the traumatic events they experienced on the battlefield, they undergo trauma. The soldier is used to the strong control that others have over him, so when the control disappears, no one cares about him anymore, and instead his trauma is aggravated. They polled National Guard members before and three months after their deployments to Iraq and Afghanistan. Results indicated that more negative post-traumatic perceptions and PTS were significantly associated with stronger pre-traumatic perceptions of control and power. A stronger pre-traumatic desire for power and control would lead to more negative post-traumatic cognition as well as more severe PTS [5].

Not only wars but also large epidemics can cause severe ASR and trauma. Every day health care workers need to deal with a large number of patients leaving, and it is common to see health care workers experiencing trauma left behind by the death of a patient in front of them. The epidemic also prevents health care workers from seeing their families, and they are confined to isolation areas in hospitals every day. Health care workers face the fear of death, the fear of the unknown, and the inability to get social support every day, so they are in great need of attention. It becomes necessary to study what the main factors of ASD are. Using the Stanford Acute Stress Response Questionnaire (SASRQ) and a web-based questionnaire, the researchers studied those who were in a hospital in Wuhan treating severe neo-tuberculosis during the epidemic. To exclude errors due to other traumatic events, the investigators excluded nurses who experienced life major changes such as divorce or a family member who died within a month. Females (97.7%) were the majority in the sample. It covered most age groups and a variety of circumstances, such as professional level, marital status, sibling status, and degree. The prevalence of ASD was found to be 13.8%, and the development of ASD was also associated with a high level of negative coping styles. In this condition, it was found that possibly higher social support is an effective protective factor against ASD, especially for those whose social support comes from friends and colleagues. Diagnoses of aircraft disaster responders were compared to the ASD diagnoses of front-line nurses in this sample, and it was found that the incidence was much lower among nurses. Possible reasons for this are the professional characteristics of nurses because they are more open to traumatic events as well as having gone through psychological training, they have more ability and knowledge to deal with a such traumatic events. There for higher social support, especially from friends, and colleagues, can be an effective protective factor the onset of ASD [6].

Social support may enhance post-war resilience to help the manager recover from trauma. This is because social support from friends likely gives patients the confidence to continue their lives and provides advice that allows patients to have a positive outlook on life. Having someone with whom the patient is not alone and being perceived as socially supportive may have an impact on the cognitive strategy aspect of choosing emotion regulation. The sample was measured on the level of social support they perceived friends, family, and significant others to be willing to give them on their own. The results suggest that an important protective factor for an individual's psychological well-being is perceived support from friends, which is an important protective factor for an individual's psychological well-being. Social support, especially from friends, can mitigate the effects of ASD and trauma, and social support is also an important protective factor for mental health. People with supportive friends are more willing to revisit problems, look for the positive, regulate their emotions,

and recover from trauma. The experience of friends can give people more confidence to deal with problems [7].

3.2 Internal Protective Factors

Self-leadership refers to knowing who people are, the experience people want to have, and consciously directing people to have those experiences happen. Self-leadership defines people, including what people do, why people do it, and how people do it. After discussing the external influences on ASR and trauma, the internal factors that influence ASR and trauma are equally important. Because self-leadership can regulate tension and enhance self-efficacy, perhaps self-leadership can alleviate ASR. Researchers reviewed and considered the relationship between self-leadership and acute stress disorder and acute stress response in health care workers during an outbreak. This trial used an online questionnaire to ask healthcare professionals about their self-leadership and ASR. The final conclusion was that health care workers' subjective estimates of the duration of the epidemic, successful foresight, and self-punishment were positively related to ASR symptoms. This means that the more pessimistic one is about the epidemic, the more severe the ASR symptoms will be. Self-leadership affects one's will, and one's will is what will affect the severity of ASR [8].

Different people show different reactions after experiencing trauma. Because of different external factors, their internal factors can cause different results. There are so many mixed factors in between that maybe one thing traumatizes one person but not another. Different ways of approaching problems can also affect a soldier's resilience. Because being optimistic about things generally moves people in the right direction. Researchers set out to investigate the relationship between cognitive-emotional regulation, resilience, social support, and acute stress response in Chinese soldiers. To understand the multiple mediating effects of social support and resilience on the relationship between cognitive-emotional regulation and acute stress response. The experimenters investigated the soldiers' resilience and emotional regulation as well as the degree of ASR. As expected, the relationship between military acute stress and cognitive-emotional regulation, resilience, and social support was significantly correlated. When military personnel responds to new problems with adaptive cognitive coping strategies such as actively accepting the problem and focusing on it to put it into perspective, it contributes to positive acute stress management. The higher the resilience, the happy level of the soldier will be higher in the long run. And it was found that most people who used poor coping, also known as blaming themselves, and blaming others reported receiving less social and family support exhibited a lower resilience, and had more acute stress reactions. Multiple mediating factors, such as social support and resilience, influence the relationship between cognitive-emotional regulation and acute stress response. Thus, it appears that social support and resilience are essential factors for recovery [9].

There are many factors that can influence recovery from trauma, such as resilience and social support, and how the trauma is handled, which are basically responses to what is happening now or what happened in the past. There is also an influence factor on the future that is a positive future orientation. Generally optimistic people will think that the future is going in a good direction, and this kind of thinking may allow the patient to reduce the trauma. Researchers used 461 Israeli lower-middle economic status school students in grades 7 to 11 as subjects. The experimental method adopted was a questionnaire, firstly, a test paper was made one month after experiencing the missile attack, measuring the ASR level and two markers of positive future orientation, and three months later PTSD was investigated. The result suggests that ASR cannot be a predictive ability for most PTSD. Significant predictors of PTSD in the three ASR comorbidities included re-experiencing and avoidance. The study's findings demonstrated a strong correlation between a high incidence of PTSD and lower levels of optimistic future thinking and lower levels of positive future thinking. the predictive rate of PTSD increases by 7% along with positive future orientation. The researchers' results showed that positive future orientation did not have a moderating effect. Because of this lack of moderating effect, there is likewise a protective effect found for positive future orientation.

Regardless of the severity of their acute traumatic stress, trauma victims may benefit from establishing this view (positive future orientation). For people who have experienced traumatic events and are at risk for PTSD, follow-up should encourage people to think as positively as possible in order to reduce the incidence of PTSD [10].

4. Conclusion

The first aspect of ASR effects is that it makes a person less productive and changes the person's cognitive and emotional responses. Although no direct relationship was found between ASR and PTSD, there are many relevant factors that are associated with this relationship. Witnessing the level of ASR is associated with subthreshold PTSD or positive PTSD, and the connection is positive. The most influential factors for ASR as well as trauma are social support and resilience. Social support from friends and colleagues is the most helpful. It can inhibit the onset of ASD and mitigate the effects of ASD and trauma. There is also a relationship between resilience and social support, with soldiers who receive less social support reported lower resilience and more acute stress reactions. Soldiers with higher resilience are happier in the long run and have a greater chance to overcome trauma. One's own will can influence the severity of ASR. Studies have shown that the more pessimistic a healthcare worker is about the outbreak, the more severe the ASR symptoms. Subjective judgments about what happened can also affect ASR. If people did not think positively about the future, it is associated with elevated rates of PTSD. The subsequent recovery process should allow people to show positive future thinking whenever possible. Different strategies for dealing with traumatic events can also affect subsequent recovery. Soldiers will recover better, if they choose adaptive cognitive coping strategies also known as active coping with new problems that can contribute to positive acute stress regulation. The incidence of ASD is low, if relevant psychological training and interventions have been done prior to the event. More experiments need to be conducted on how to mitigate ASR or what it is associated with, and what aspects of PTSD and subsequent recovery from trauma are associated with in the future. This paper can provide some guidance regarding timely interventions for ASR and relevant research directions.

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