

Stress is a Good Thing: Understanding Stress and the Development of Resilience Through Athletes

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Abstract

Stress is experienced by all individuals throughout life to varying degrees. One of the benefits of stress, when experienced at manageable levels, is the development of resilience. Resilience is the ability to cope successfully in the face of negative situations and it has been correlated with positive mental well-being and greater satisfaction in life. Athletes are a distinct group of individuals who regularly experience stress due to the nature of competition. An athlete's ability to function in demanding circumstances increases these factors and the development of resilience, providing a framework for understanding how to build resilience. Several studies have pointed to the factors underlying the development of resilience and have shown that resilience can be strengthened in the same manner as the training of physical muscles. This paper aims to examine and evaluate the research that identifies the key factors in developing resilience, specifically high self-esteem, an internal locus of control, and strong social support. Programs that have been implemented to enhance resilience among athletes and various populations are also examined. In addition, this paper identifies the drawback and limitations of research findings to date and makes suggestions for the application of the research knowledge in the future.

Keywords: Stress, Resilience, Athletes, Self-Esteem, Self-Confidence, Internal Locus of Control, Social Support

1. Introduction

Stress is an inevitable part of life. When adversity such as financial woes, relationship issues, difficult bosses, or restrictions due to COVID-19 arises, an individual will experience psychological and/or physical stress. Although unpleasant, the right amount of stress can be beneficial for the development of resilience. Psychological resilience is defined as “the role of mental processes and behavior in promoting personal assets and protecting an individual from the potential negative effect of stressors” (Fletcher & Sarkar, 2013, p. 14). Essentially, resilience refers to one's ability to re-establish mental well-being after experiencing

adversity (Stoffel & Cain, 2018). Resilience is important because it has been associated with a longer life span, lower levels of depression, and greater overall happiness in life (Harvard Health Publishing, 2017), as well as the ability to withstand future stressors. In light of this, our central objective is to provide a review of the current research literature to identify the major factors involved in developing resilience.

Within the psychological scientific community, the collective understanding of how resilience develops has evolved over the past few decades. Liu et al. (2018) note that in the 1970s, resilience was attributed to individual characteristics such as strong planning skills, positive emotions, and self-regulation

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that helped children overcome the adversity of abusive environments. By the 1990s, researchers had gone beyond the individual, to analyze how external social factors influenced resilience development (Levine, 2003; Liu et al., 2018; Ozbay et al., 2007). Over the past decade, resilience studies have incorporated biological variables as well, leading researchers to study the relationship between neural activity and neurotransmitters in the context of resilience. While resilience is dependent on a myriad of factors, research indicates that flexibility and adaptability to changing situational demands are important underlying factors in developing resilience (Bonanno & Burton, 2013; Chen & Bonanno, 2020). One distinct population that has been studied in this context is athletes. The sporting arena represents a natural setting to explore how individuals perform in demanding situations. Athletes compete in strenuous environments where they face consequences for poor performance. In addition, athletes suffer from a variety of other stressors, including recovery from injury, difficult relationships with teammates and/or coaches, and fear of failure. Even on an organizational level, stress is abundant; the best teams in professional sports may lose up to 40% of their games (Galli & Gonzalez, 2015). For example, the 2006 St. Louis Cardinals went 83-78 which is a 51% winning record (2006 Baseball Standings, n.d.). One can only surmise that their season was filled with stress. Despite this, the team was resilient and ultimately won the World Series. It is important to note, however, that resilience can be displayed in ways other than victory. In the context of sports, resilience can be operationalized as the behavior of performing better after a poor performance measured by improvements in physical testing quantities like speed, agility, and strength (Galli et al., 2015). In a study of the psychology literature, athletes were found to be more resilient than non-athletes (González-Hernández et al., 2020; Samaei et al., 2012). Therefore, by studying athletes' ability to remain psychologically strong in stressful situations, the findings can be applied to non-athletes to help them develop resilience to cope with everyday stresses. Researchers have identified a number of common factors among athletes that contributed to their ability to use stress as a source of strength and

assist in their development of resilience. Among these factors, three are particularly noteworthy. These include: having a positive sense of self, an internal locus of control, and strong social support.

2. Positive Sense of Self

One common trait found among athletes is a positive sense of self, which can be exemplified by self-esteem or self-confidence. Self-esteem refers to how a person evaluates their worth. An individual with positive self-esteem sees themselves as good and competent while those with negative self-esteem will lack confidence and feel bad about themselves. Self-esteem and resilience have been found to be highly correlated (Cazan & Dumitrescu, 2016). A person with positive self-esteem will have greater feelings of self-confidence and self-worth. This results in greater independence and the ability to remain resilient in times of stress (Cazan & Dumitrescu, 2016). Athletes as a group tend to have high self-esteem, as success in sports requires hard work and dedication which leads them to have inner confidence to achieve their goals (Jones & Cannoughton, 2007). Participation in sports has been associated with positive development of the mind and body, leading to higher self-confidence and self-esteem. In a survey of 514 college students who completed the Rosenberg Self-esteem Scale, those who had participated in sports at an earlier age reported higher self-esteem and happiness compared to students who had not participated in sports (Collins et al., 2018). Of course, results were based on self-reported assessments and may not be generalizable beyond the college-age population. Furthermore, the authors acknowledge that other factors could also be at play for the results. Still, the results are consistent with numerous other studies. In a study of elite volleyball players, Belem et al. (2014) found a positive correlation between resilience and self-confidence. Booker et al. (2015) conducted a cross-sectional study of 4,899 adolescents and also found that high participation in sports was associated with happiness. Students who play sports consistently over time were reported to be less depressed and more satisfied with life (Collins et al., 2018). The use of positive emotions during stressful situations

increased the athletes' resiliency and adaptation to future stressful situations. In essence, adaptation and self-confidence reflect a positive self-reinforcing cycle in contributing to resilience: an increase in adaptive skills leads to greater self-confidence, further enhancing adaptation and resilience (Belem et al, 2014).

It should be noted that self-esteem is often seen as a personality trait that is stable and enduring, but, in fact, it can be developed (Mann et al., 2004). Programs have been developed to improve self-esteem among different populations, such as those experiencing poor body image, or those exhibiting antisocial behavior. In one study, 470 male and female students between 11 and 14 years of age took part in an interactive program aimed at improving self-esteem. Compared to the control group who received a personal development and health class, the experimental group was found to have improved self-image and self-esteem at the conclusion of the program and even 12 months later (O'Dea & Abraham, 2000). While the intervention program was considered to be successful and well-received, its limitations lie in the self-selection of the groups. Those who volunteered to take part in self-esteem education have greater motivation to improve their self-esteem. Furthermore, long-term permanent benefits past one year are unclear. Nevertheless, the importance of self-esteem, in general, cannot be overstated. Low self-esteem is a factor in depression and anxiety while high self-esteem is linked to improved mental health and resilience (Collins et al., 2018). As noted, athletes generally have high self-esteem because in order to succeed in competitive sports one needs to have the confidence and belief that they are competent. That confidence, in turn, gives way to the belief that they can change their outcomes.

3. Internal Locus of Control

Positive self-esteem is a key component of coping with stress, but it can only get one so far. Another characteristic that appears to have aided athletes in being resilient to stress is having an internal locus of control. This refers to a person's belief in their control of outcomes, rather than attributing results to

external factors (Myers & DeWall, 2018). For example, if an athlete performs poorly in a sports competition, they would attribute it to their actions rather than to bad luck or a factor out of their control, and focus on how to improve next time. Individuals who have an internal locus of control will remain calm and adapt more effectively to situations of stress compared to individuals who have an external locus of control (Cazan & Dumitrescu, 2016). In a study of 60 athletic and 60 non-athletic female students between the ages of 19-26, those who were athletic tended to exhibit higher levels of internal locus of control than non-athletes. Statistical analysis of the data, gathered through questionnaires measuring loneliness and internal vs external locus of control, found a meaningful difference in the feelings of loneliness and locus of control between the two groups. The athletic group felt more directly responsible for their successes and losses as a result of their physical activities, and this led to a feeling of having more control in their lives (Samaei et al., 2012) while the non-athletic group experienced fewer feelings of control. Similarly, in their study of mental toughness among Olympic athletes and trainers, researchers identified many attributes that led to resilience. One attribute was having a mindset or attitude that their success was due to their own hard work. This reinforced their belief that success is achievable and that they could achieve whatever they set out for themselves (Jones et al., 2007). In another study of 140 Stanford student-athletes, internal factors such as locus of control, self-esteem, and mindfulness were more positively correlated with happiness, and a general feeling of happiness could in turn build resilience through the ability to persevere in the face of difficult situations (Denny & Steiner, 2009). Athletes as a group have a high internal locus of control, as the sports environment offers many opportunities to exert control over stressful situations that may arise (Samaei et al, 2012).

The importance of internal locus of control in building resilience is also generalizable to non-athletes. Among students of varying ages, having an internal locus of control led to greater resilience in stressful situations (Cazan & Dumitrescu, 2016; Georgescu et al., 2019; Kronborg et al., 2017). A sample of 41 psychology students completed Rotter's

Locus of Control Scale, Personal Behavior Inventory, the Resilience Scale, and the Self-Efficacy Scale, with results showing that an internal locus of control was equated with resilience, resistance to external pressure and prosocial behavior (Georgescu et al., 2019). An internal locus of control readily lends itself to resilience by allowing individuals to positively adjust to a stressful situation, either on their own or by seeking help. In contrast, subjects who had an external locus of control had lower levels of resilience. These individuals were socially passive and less effective in finding creative solutions to challenges (Georgescu et al., 2019). Despite the small sample size of this study, it demonstrates that internal locus of control is an important component in building resilience among non-athletes as well as athletes.

4. Social Support

Besides having a positive sense of self and an internal locus of control, scholars have pointed to social support as an additional vital factor in promoting resilience (Liu et al., 2018; Ozbay et al., 2007). Strong social support is noted to be one of the main elements involved in well-being and resilience to social and economic stress, while poor social support is associated with greater stress and depression (Liu et al., 2018). Social support provides security through a communal identity. Individuals who belong to a community or group in which they feel a sense of belonging and purpose will be less threatened by extremely stressful situations (Elcheroth & Drury, 2020). Social support may also have a physiologically positive effect on resilience through moderation of the hypothalamic, pituitary, and adrenocortical system (Ozbay et al., 2007), which are responsible for regulating body functions such as appetite, metabolism, and the fight or flight response, respectively, (and which are more likely to be in balance when one feels a strong amount of social support). On the other hand, a lack of belongingness has been associated with stress, anxiety, and low self-esteem in the population at large (Mohamed et al., 2014), and evidence suggests that social isolation impacts longevity as much as or even more than physical factors like smoking or obesity (Elcheroth &

Drury, 2020).

Athletes who play team sports have a communal sense of identity and generally gain social support from teammates and coaches as they learn to work together towards a shared goal. Even athletes of sports considered to be individually oriented, such as tennis or swimming, benefit from identification with the team and the social support that stems from being a part of a larger group. This enables them to respond more positively to stress and to be more resilient in the face of mental or physical setbacks. For instance, athletes recovering from injuries benefited from having the support and empathy of those in similar circumstances (Galli & Gonzalez, 2015). Even the support of a single individual is sufficient; research by Levine (2003) shows that during stressful times, resilient individuals consistently had the support of at least one individual who assisted them as a nurturer or mentor. Additionally, social support was one of several factors in building resilience in a study of competitive athletes with spinal cord injury (Machida et al., 2013). While the development of resilience is multi-faceted, an overwhelming amount of research shows that social support is one of the primary factors involved in dealing with stress and building resilience (Ozbay et al., 2007). Athletes as a whole tend to experience social support which, along with other factors, enables them to be highly resilient individuals.

5. Developing Resilience

From these findings, we see that resilience is dependent on individuals' beliefs about themselves and also on their support environments. Since beliefs and environments can change over time and can vary in different situations, resilience levels may also fluctuate. Therefore, resilience can also be enhanced. To that end, researchers have implemented various programs to develop resilience among a variety of populations. Fletcher & Sarkar (2016) developed a "mental fortitude training" program to promote psychological resilience among athletes preparing for the Olympics. The program emphasized the importance of a multifactorial approach using a supportive environment, a positive mindset to challenge negative thinking patterns, and personal

characteristics such as self-confidence and optimism. Of particular importance was helping individuals evaluate the stress they encountered, identifying negative thoughts and emotions, and replacing them with constructive thinking (Fletcher & Sarkar, 2016). Along these lines, rational emotive behavior therapy to change negative thought responses was effective in improving resilience in a sample of squash players (Deen et al., 2017).

One might argue that athletes are more flexible and receptive to such a program. However, non-athletic people can benefit from these behavior therapies and strength exercises as well. Research in resilience development among other populations (non-athletes) as well as in other countries has been shown to be effective against circumstantial stressors. Using a similar combination of psychological and cognitive therapies, Li et al. (2017) conducted an intervention program aimed at increasing resilience among 790 children in China who had one or both parents that contracted HIV/AIDS. The children received 20 hours of training skills in positive thinking, emotional regulation, and problem-solving. Positive parenting skills and community activity training were also provided to caregivers and community workers in some cohorts. Compared to control groups that did not receive the intervention, the experimental group reported increased control over their lives, ability to regulate emotions, and levels of resilience. This continued at 6 and 12 months follow-ups (Li et al., 2017). A variety of therapeutic programs including life skills education, mindfulness meditation, and stress training have been implemented to aid in improving resilience, and more interventions are likely (Liu et al., 2018). However, implementing resilience-building programs is challenging. Like other psychological concepts that cannot be observed easily, resilience requires operationalization using specific definitions and tools, such as questionnaires and physical assessments as in the case of athletes. Policymakers need to collaborate to decide how to operationalize resilience for the intended population, deciding what to measure and the time involved. In any case, the understanding of resilience in athletes has already been applied to help diverse populations in different programs.

6. Discussion

Each of the studies provides support that resilience is a developable trait, and several common factors that promote resilience were identified. More specifically, enhancing psychological traits such as confidence and self-esteem was important in promoting positivity and resilience (Belem et al., 2014; Cazan & Dumitrescu, 2016; Collins et al., 2018; Jones et al., 2007). Developing cognitive skills related to problem-solving was also significant as it led to emotional regulation and a sense of control (Deen et al., 2017; Jones et al., 2007; Samaei et al., 2012). Furthermore, social support was necessary in improving resilience among both athletes and non-athletes (Fletcher & Sarkar, 2016; Li et al., 2017). Understanding resilience and the factors in its development have allowed researchers to develop effective programs that have enhanced resilience among specific groups.

However, the limitations of each program need to be considered. The samples studied were very specific, so it is difficult to say that the same program will have the same therapeutic effects on different individuals. The mental fortitude program (Fletcher & Sarkar, 2016) and the rational emotive behavior therapy (Deen et al., 2017) applied to athletes would need to be refined and validated in other populations to confirm similar outcomes, since one could argue that athletes have a mindset that already encourages them to be more resilient than non-athletes. In Li et al.'s (2017) study, subjects were from a specific geographic location in China and it is unclear whether their findings could be replicated in countries with different cultural or socioeconomic standards. In all cases, the generalizability of the data requires following a large sample over time. In addition, each of the studies is limited in that subjects self-reported their psychological well-being and resilience levels, which may be inaccurate. A survey may produce inaccuracies from phenomena such as the framing effect and the social desirability bias. Furthermore, stress is a subjective term that people of different ages, ethnicities, and gender identities perceive and adapt to differently. It is important to identify these internal and situational differences in order to address and measure resilience accurately.

For these reasons, researchers trying to understand resilience have focused first on measuring baseline or pre-stress levels of each person, then examining the stressor event, and finally looking at the resilience levels after the stress (Bonanno et al., 2015). In a review of subjective well-being after major life events such as divorce or death, Luhmann et al. (2012) similarly utilize a “process perspective,” which examines well-being and adaptation in the same individual over time, rather than across different individuals.

Despite the limitations of these studies, the research is promising, providing a good foundation for the development of resilience in people of all ages and backgrounds. This knowledge can empower healthcare professionals to develop strategies that utilize stress to maximize resilience and well-being for the general population, particularly relevant when faced with shared stressors such as the Covid-19 pandemic and its far-reaching effects on individuals worldwide.

7. Conclusion

When adverse situations arise, resilience is necessary to maintain positive mental health. Individuals with low levels of resilience may not be able to deal effectively with stress, are likely to have low self-confidence and experience increased levels of anxiety. This can lead to a self-perpetuating cycle of negativity. Athletes regularly experience mental and physical stress, as they must exert themselves when training and in competition, all the while dealing with the uncertainty of outcomes. Despite being constantly exposed to stress as part of a competitive environment, athletes of all ages tend to be more resilient due to their experience in the face of adversity (González-Hernández et al., 2020). Therefore, scholars can consider athletes’ behaviors, psyches, and environments to be prime areas of study in understanding how to cultivate resilience. This paper reviewed the literature examining the concept of resilience and identifying the factors that are important to its development, with a focus on athletes. These include having a positive sense of self, an internal locus of control, and a strong social support system. An athlete's ability to function in

constantly demanding circumstances provides a framework with which to understand competitive resilience and that framework is applicable to the entirety of the general population. The findings raise hope that techniques for enhancing resilience factors are generalizable to any type of adverse situation since resilience is required for consistent wellbeing in an inevitably stressful life.

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