Article

Review of General Psychology
2025, Vol. 29(3) 311–324

DOI: 10.1177/10892680251363859
journals.sagepub.com/home/rgp
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The Resilience Portfolio Concept: New Insights into How Sufficient Strengths Can Overcome Even High Burdens of Trauma

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Abstract

There have been three great revolutions in trauma science, each driven by a big idea. The first, in the late 20th century, led to the discovery that trauma is a much bigger public health problem than previously recognized. In the second revolution, around the turn of the century, we learned that each dose of trauma adds to our cumulative lifetime burden. Now we are in the third revolution, which shows that the dose-response concept applies to strengths too, and that we can overcome even high doses of trauma with sufficient "doses" of psychosocial strengths. This work uses a multidimensional, process-oriented approach to resilience, in contrast to older formulations that often treated resilience as an innate personality characteristic. A framework called the resilience portfolio model incorporates the dose-response insight of the third revolution in trauma science and identifies four strengths domains for overcoming trauma: meaning making, regulation, interpersonal relationships, and environmental resources. The paper synthesizes existing science, including 16 resilience portfolio studies involving more than 22,000 participants in 9 countries, to identify the most impactful strengths for overcoming trauma. The paper also briefly reviews evidence for interventions that support resilience, including narrative, mindfulness, gratitude interventions, and *shinrin yoku* (forest bathing).

Keywords

resilience, violence, trauma, wellbeing

The history of research on trauma, violence, and resilience can be summed up in three revolutions, each of which involved a big idea with extensive scientific evidence from psychology and other disciplines. The first revolution applied the tools of science to the problem of violence for the first time, revealing that many forms of interpersonal violence were both more common and more harmful than had been previously recognized. The second revolution, around the turn of the century, introduced the idea of the cumulative burden of lifetime trauma exposure, with research on concepts such as adverse childhood experiences (ACEs) and polyvictimization. Now we are in the midst of a third revolution that is also being driven by an appreciation of the importance of dosage, this time by focusing on strengths that help people overcome trauma. This has led to a redefinition of resilience, away from relatively unitary constructs that emphasized emotional toughness, persistence, and grit in 20th century research and toward multidimensional frameworks that emphasize the need to access a range of internal assets and external resources. One of these frameworks, the resilience portfolio model, is the first to explicitly incorporate insights from polyvictimization and the impact of dosage on functioning. This paper summarizes these three revolutions and argues that the concept of dosage is revolutionizing resilience research. The third revolution is currently underway, with new data on the benefits of high doses of strengths emerging frequently. This paper will also identify the strengths that are most useful to have in one's resilience portfolio, based on a review of the first 16 quantitative resilience portfolio studies with more than 22,000 participants in 9 countries, including what is known about the newest strengths domain, the physical environment.

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The First Big Idea in Violence and Trauma Research

Of course, we have always known about the problems of violence and trauma. Our oldest art and writing contains images of violence and stories of the devastating impacts of trauma.– incidents involving threats or actual harm and injury, humiliating and shaming, or witnessing harm to others (Comas-Diaz et al., 2019). Community advocates were working on the problem by the turn of the last century—the late 1800s and early 1900s (with more sporadic earlier efforts in some locales) (Flegel, 2016). This included efforts to protect children from abuse and push back on the legality of family violence in many settings. However, it was not until late in the 20th century, starting in earnest in the 1970s, that significant numbers of researchers applied the principles of social science to the problems of violence and trauma. When they did, the effect was dramatic. One of the first major efforts was the National Family Violence Study, led by sociologist Murray Straus and conducted in 1975. People were shocked that 1 in 10 couples reported physical violence towards each other in that study (Straus & Gelles, 1990). Rates of child abuse in that same study were about 1 in 16 families. These figures were many, many times higher than the numbers reported to Child Protective Services or other authorities. These early studies also documented the extent of physical injuries and negative psychological consequences, in an era when much interpersonal violence (especially within families or among children) was still minimized or at least not considered a public health problem (Pleck, 2004). This was the first big idea in trauma and violence research: Interpersonal trauma was far more common and more harmful than anyone had previously realized.

As is the case with many revolutionary ideas, our understanding about the public health costs of violence changed quickly and the tools of science were soon applied to many other forms of victimization. In Norway, Dan Olweus discovered that at least one in four kids were the victims of severe bullying (Olweus, 1978). Mary Koss and colleagues found that one in four college women had been the victim of sexual assault (Koss et al., 1987). This revolution exploded soon afterwards, leading to research on all kinds of phenomena: Elder abuse, community violence, gang violence, sexual harassment, historical trauma, and cybercrime. Not only did scientists from many diverse fields and regions discover that all kinds of interpersonal violence and trauma were much more common than they realized, but these and other studies (e.g., Kendall-Tackett et al., 1993) also determined that victimization was more harmful than they realized, leading to depression, PTSD, suicidality, substance use, school dropout, and other negative consequences.

This was among the most impactful social science ever conducted, if not the most impactful. This science helped transform our society. The data formed a foundation that helped justify a huge investment—billions of dollars—in public health efforts to reduce violence and help survivors. New or greatly expanded services include domestic violence shelters, rape crisis hotlines, suicide hotlines, child abuse hotlines, children's advocacy centers, specialized police units for family and gang violence, and school-based violence prevention programs. Changes in laws and policies followed, such as the US Violence Against Women Act (Modi et al., 2014) and the Council of Europe Convention on preventing and combating violence against women and domestic violence (https://www.coe.int/en/web/istanbul-convention/home).

Nonetheless, as important and impactful as this big idea was, the science underlying it had important limitations. One of the most significant turned out to be the creation of professional silos (Hamby et al., 2021). Silos—those large agricultural buildings with no windows and limited access points—are a metaphor for poor communication. Even though scientists were examining closely related phenomena, violence and trauma research quickly divided into numerous subdisciplines and even sub-subdisciplines with increasingly narrow foci. The overlap between many forms of victimization is very high (e.g., Hamby et al., 2010), yet there was little communication across areas of violence and trauma research.

The Second Big Idea in Violence & Trauma Research

The second revolution started in 1998 and addressed the silo problem by introducing the concept of *trauma dosage*, or the cumulative lifetime burden of trauma. The first paper of this new revolution was the original study on adverse childhood experiences (ACEs; Felitti et al., 1998). This work represented a sharp turn from most work that had been done until then. The big idea represented in this second revolution was that your cumulative lifetime exposure to trauma mattered the most. There were several ways that this paper pointed to the importance of cumulative exposure. For one, it was an older sample with an average age of about 56 and including people even into their 80s and 90s. Until that time, most research on childhood trauma had been conducted with children or adolescents, or perhaps college students. This helped show that the effects of childhood trauma could last much longer than had been demonstrated in prior studies (thus, the effects of one trauma may not have dissipated by the time another was experienced).

Second, most work until that time had focused on psychological outcomes, such as depression or PTSD, and behavioral outcomes, such as substance misuse and suicidality. Felitti and colleagues included many other health problems, such as heart disease and diabetes. They found strong impacts of childhood trauma on diseases that are much more common among older adults than children. Most people, even many trauma researchers, were not used to thinking about the

effects of interpersonal experiences on our internal physical health. When we think about child abuse, we may think about physical injuries such as bruises or broken bones which heal relatively quickly. Bruises and broken bones are seldom the source of the harms that can still be seen half a century or longer after the abuse occurred. This hinted at mechanisms that had not yet been much discussed.

The biggest idea of the first ACEs paper was the way that it considered exposure to adversity. Many papers of the era simply grouped people into "victims" and "non-victims," only looking at one type of violence or trauma at a time. Felitti and colleagues asked about many kinds of family problems, including child abuse as well as problems such as parents with substance misuse or serious mental illness. Then, they summed up an adult's total exposure to all these problems, finding, famously, that bad outcomes were particularly prevalent among people who had experienced four or more childhood adversities. The dose mattered. In the years since, this finding has been replicated numerous times and extended to dozens of health and psychosocial outcomes. (e.g., Gilbert et al., 2015; Hughes et al., 2017; Merrick et al., 2019; Petruccelli et al., 2019; Sahle et al., 2022; Shonkoff & Garner, 2012).

Other dosage ideas also emerged around the same time. *Polyvictimization*, an idea developed from research with the Juvenile Victimization Questionnaire (JVQ), extended the dosage idea to include peer and community violence (Finkelhor et al., 2005, 2011). This work also found a dose-response relationship between the number of different types of victimizations and symptoms, suicidality, or other indicators of functioning (e.g., Finkelhor et al., 2011). These findings have been replicated in many studies (Haahr-Pedersen et al., 2020; Lino et al., 2025).

Since the early studies of this era, the dosage idea has been expanded further. Now we recognize that, to truly understand the impact of trauma on people, we must include a wide range of adversities. We need to include the childhood family experiences that were included in the original ACEs research. We also need to include peer victimization, community violence, sexual victimizations, and various forms of witnessing and indirect exposure to violence, as demonstrated by research with the JVQ and expanded versions of the first ACEs measures (e.g., Cronholm et al., 2015; Finkelhor et al., 2005, 2011; Wade et al., 2014, 2017). In the intervening years, we have come to appreciate the importance of other types of traumatic experiences, including cybervictimization, institutional betrayal, elder abuse, and secondary trauma experienced by first responders, rape crisis counselors, and similar professionals (e.g., Hamby et al., 2018a, 2024; Simmons & Swahnberg, 2021; van Mol et al., 2015).

Much later than we should have, we now understand that various forms of oppression and discrimination are forms of trauma too: Racism, homophobia, transphobia, sexism, ableism, Islamophobia, colorism, and others (e.g., Comas-Díaz et al., 2019; Cronholm et al., 2015; Wade et al., 2014, 2017). We are also slowly but surely incorporating environmental disasters into the trauma dosage model (Banyard, Kelmendi, et al., 2025). I'm intentionally not using the word "natural" to describe these disasters because they are not fully natural (van Breda, 2024). They are worsening from human-caused climate change as well as humans increasingly relocating to coastal regions and other areas that are naturally prone to storms, fires, and floods. Although the broader literatures on trauma and community resilience have long recognized environmental disasters as traumatic events, this has been another silo that is only recently getting incorporated into the trauma dosage idea.

This broader lens reveals that even those shocking numbers from the first era of trauma research were too low. One in 10 couples and one in four college women sounded like startling amounts of victimization, but they still implied that victimization was a rare event that did not happen to most people.

Now we know that the opposite is true: most people are victimized at some point in their lives. In the National Survey of Children's Exposure to Violence, a representative sample of U.S. children aged 1 month to 17 years (average age under 10, with caregiver interviews for those under 10), 61% were found to have at least one victimization (Finkelhor et al., 2009). This was based on questions about exposure to more than 30 types of violence and crime, including various forms of caregiver victimization, peer victimization, sexual victimization, and exposure to community violence. In numerous adolescent and adult samples in the U.S., the lifetime prevalence rates are 80% and higher (even with briefer assessments of victimization exposure; e.g., see Brooks et al., 2024; Elm, 2020; Hamby et al., 2018b; Merrick et al., 2017). When you add in non-violent forms of traumatic experiences, such as the death of a loved one or having one's home damaged in an environmental disaster, my colleagues and I have found numbers around 98% and 99% (Hamby et al., 2018b, 2020b). Despite these high rates, these estimates are based on a limited set of exposures. For example, in Hamby et al., 2018b, 2020b, there were no questions on hate-motivated victimizations, historical trauma, sexual harassment, or workplace bullying. Further, those studies took place prior to the coronavirus pandemic and had limited assessment of environmental disasters.

Rates of interpersonal victimization above 70% (and often above 80 or 90%) have also been found in numerous studies from around the world (e.g., Almuneef et al., 2016; Cyr et al., 2013; Gonzalez-Mendez et al., 2021; Kelmendi & Hamby, 2024; Kidman et al., 2019; Méndez-López & Pereda, 2019; van der Feltz-Cornelis et al., 2019). Even polyvictimization—the experience of two or more different types of trauma—is the norm, not the exception. In some samples, this rate has also exceeded 70% (e.g., Brooks et al., 2024; Hamby et al., 2020b). Although these numbers may seem high, they represent a more accurate assessment of the true burden of trauma than earlier studies that focused on a single or limited set of issues.

Big ideas often have ripple effects, and the research on trauma dosage was no exception. The concept of trauma dosage not only revolutionized the epidemiology of trauma, leading to a recognition that trauma is pervasive. This concept has also helped advance our understanding of how trauma works on our bodies. We now understand that one of the most important long-term impacts of trauma is the way it creates wear and tear on our bodies, or what is known as *allostatic load* (e.g., Geronimus et al., 2006; Hertzman, 2012; McEwen & Seeman, 1999). Allostatic load can be seen in various biomarkers, such as inflammation levels and cortisol reactivity. Trauma affects many systems of our body, including neuroendocrine, immunological, and metabolic (Hamby et al., 2021).

We have known for decades that trauma can create vicious cycles (Hamby et al., 2021). Now we are starting to recognize how posttraumatic physiological processes play a role in these vicious cycles. For example, trauma increases allostatic load, and higher allostatic load can contribute to greater risk for depression (e.g., Rodriquez et al., 2020). Depression can lead to self-medicating with drugs and alcohol (e.g., Hinnant et al., 2015), and self-medicating with drugs and alcohol can increase inflammation or other markers of allostatic load (Bishehsari et al., 2017), which increases the likelihood of a downward spiral.

Vicious cycles involving allostatic load hint at one reason that dosage matters more than any single type of violence because, as far as we know with our current state of science, most stress responses are similar across different types of traumas. We don't have a different stress response for getting bullied versus getting abused by our parents versus getting sexually assaulted. Thus, even though these are, in some ways, very different kinds of experiences, they are similarly adding to our lifetime wear and tear on our body. As the psychiatrist Bessel van der Kolk has written (2015), the body keeps the score.

This doesn't mean that there are not unique consequences for different kinds of traumatic experience. For example, sexual assault can lead to sexually transmitted infections or pregnancy. But in terms of long-term effects, there is more commonality across different types of violence and trauma than formerly recognized. It is these long-term effects on allostatic load that are probably driving many of the long-term consequences.

This level of understanding was the status quo for years after the publication of that first ACEs study. It paints a dark picture. However, fortunately we have already moved onto the next big idea, and this one has transformed our understanding of resilience and offers a more optimistic future for those trying to recover from trauma.

The Third—And Current—Big Idea in Trauma and Violence Research

The third big revolution in trauma took a cue from the insights of trauma dosage, this time applying the dosage concept to the idea of resilience and healing. The big idea is that a sufficient dosage of strengths can counter even large doses of trauma.

To understand how we have evolved on the topic of resilience, we must return to the 1970s and 1980s. That's when scholars like Norman Garmezy first began noticing that some of the children and adults they met were doing better than expected, if all you knew about them was their trauma exposure (Garmezy, 1974). At the time, most providers would have probably attributed any differences in functioning to experiencing a milder disease process. To his credit, Garmezy noticed that some of the differences in how maltreated children were functioning was not necessarily just due to their trauma dosage. Even some children who had a lot of maltreatment exposure were doing better than expected.

Unfortunately, the idea that he came up with to explain these differences was wrong. He thought that some children were so-called "invulnerables," like superheroes (Garmezy, 1991). That is, by genetics or perhaps temperament, they could just cope with abuse better. Even back in the 1980s, people like the psychiatrist Michael Rutter were pushing back on this overly simplistic idea (1985). However, this idea that resilience was about some kind of individual toughness has persisted (often with harmful consequences). Even today, in many quarters, resilience is still largely seen as an individual personality characteristic, one that embodies emotional toughness or grit. The third big idea has finally offered a more scientifically accurate alternative to this limited, one-size-fits-all approach to resilience.

Ironically, the insight of these early resilience researchers that has held up scientifically is one that much of the field has seemed somewhat resistant to hear. Resilience researchers have been trying to tell us for decades that, surprisingly or not, it is well-established that the most common outcome after trauma is resilience. Almost 25 years ago, Ann Masten (2001) coined the phrase "ordinary magic" to describe the pervasiveness of resilience following trauma. There are other highly cited papers (e.g., Bonanno, 2004) making the same point. Nonetheless, if you read much of the literature on violence and trauma, you would not get the impression that most people manage to maintain or, within a fairly short time, recover their previous levels of functioning without professional help.

Perhaps this message of resilience can be a tough sell because it's not in the best interests of many stakeholders. Researchers, nonprofits, and advocates rely on grant funds to work on these huge public health problems, and unfortunately, a good way to keep the public investing in a problem is to paint it as a crisis (Loseke & Best, 2003). Policymakers can be very reactive, and there are always many worthy causes competing for a too-small pot of dollars invested in health, wellbeing, and the public good. Trauma *is* a crisis, but it's also important to realize that humans have an amazing capacity for healing.

Extensive scientific evidence indicates that most people are resilient after trauma. Not even just in the sense of not

meeting criteria for PTSD or some other psychological diagnosis, but resilient in the sense of thriving—at least as we usually measure that in our research studies. This is true not only of adults, but even of small children. For example, Yoon and colleagues (2024) conducted a study with the National Survey of Child and Adolescent Wellbeing, a sample of young children who have been involved with the child welfare system. It is a strong dataset that includes many professionally administered developmental tests as well as multiple informants. Yoon et al. found that even immediately after enrollment in the study, close to the beginning of their involvement with the child welfare system, more than half (54%) of these children were resilient in the sense that they were functioning within normal limits across a range of developmental skills, including emotional, behavioral, social, and cognitive. Just 18 months later, 81%, four out of five, of these children were functioning at developmentally age-appropriate levels in all four assessed areas. Although that still indicates a substantial need for services and a big public health problem in this population, it is also a hopeful message about the potential for thriving despite early adversity.

Other research with adults has shown that approximately three out of four people are thriving, in terms of self-report on measures of subjective wellbeing or similar measures (e.g., Hamby et al., 2018a). And other research has found that even after extremely traumatic events, that while PTSD rates are elevated, PTSD is still found among a minority of survivors. In fact, even after horrific events, one of the biggest differences between people who get PTSD and people who do not is their prior trauma dosage (e.g., Galea et al., 2002). Exposure to trauma—even substantial exposure to trauma—does not doom survivors to a life of PTSD, depression, or substance use.

Resilience Portfolios: A Multidimensional Approach to Overcoming Trauma

What does dosage look like for strengths? Now we recognize that far from being limited to some individual trait like emotional toughness, *resilience is a process that involves the entire human ecology* (Hamby et al., 2018a; Ungar, 2021). This includes some individual factors—although not just toughness or grit—as well as the help and support we get from external resources. My colleagues and I have developed a model called the *resilience portfolio model* (RPM; Banyard et al., 2025; Hamby et al., 2018a) that focuses on four key domains that are important for the process of overcoming trauma: meaning making (connecting to something larger than yourself and developing an identity), regulation (managing emotions and behaviors), interpersonal relationships (connections to family, friends, and community), and (most recently) environmental characteristics (features of the natural and human-built environments).

There are several ways that dosage has been captured in this new generation of resilience research. One such concept is *positive childhood experiences* (Bethell et al., 2019). These are also sometimes called benevolent childhood experiences (Hou et al., 2022) or positive and compensatory experiences (Morris et al., 2021). These have served an important role supporting this third big idea because they have shown, across numerous studies, a dose-response relationship with outcomes, with more positive childhood experiences being associated with better outcomes (Bethell et al., 2019; Hou et al., 2022; Morris et al., 2021; Schmitz et al., 2024). However, these concepts are limited for a few important reasons. For one, they primarily focus on support received from family, and, to some extent, from teachers, peers, or others in a child's immediate social network. Although an improvement compared to early conceptions of resilience, these measures overly focus on external resources provided to children, versus children's abilities to use their own strengths and skills to cope with trauma. Further, the specific elements, although drawn from prior literature, were not independently tested for their importance. Additionally, a focus on childhood is not malleable for adults and even perhaps older adolescents. We need to focus on assets and resources that can be the target of intervention for everyone.

Resilience portfolios offer another approach to capturing dosage. This refers to all the strengths we can access across all four domains. We have found, across 16 different datasets including more than 22,000 participants from nine countries (Australia, Canada, Ireland, Kosovo, New Zealand, Singapore, Spain, United Kingdom, and the U.S.), that good stuff counts more than bad stuff. Further, the best model to capture this is a simple additive model, in which our current functioning is influenced by our trauma dosage and our strengths dosage. With a sufficient dosage of strengths, people can overcome even high doses of trauma. (Existing data show this even though most of these studies only look at the three domains because the environmental one is new).

Poly-Strengths: A Dosage Concept for Strengths

My colleagues and I are working with a dosage concept called *poly-strengths*, which is another way of capturing the size and diversity of someone's resilience portfolio. Poly-strengths is an index of the number of strengths that people have at above-average levels. In several studies, we have found that poly-strengths is independently associated with better outcomes (Brooks et al., 2024; González Méndez & Hamby, 2021; Gonzalez-Mendez et al., 2021; Hébert et al., 2025; Moisan et al., 2019; Hamby et al., 2018a, 2024; Schultz et al., 2024). However, we have not found that poly-strengths is significant in all studies, especially (but not only) those focusing on health-related quality of life (e.g., Faires, 2021; Hamby et al., 2020a, 2023; Ujvari et al., 2025). Although this needs further

exploring, one possibility is that there are a smaller and more specific set of strengths that support health-related quality of life versus broader psychological wellbeing. Another possibility is that we still need to identify which strengths are most important for resilience specifically and the process of overcoming trauma, because all studies to date have included numerous strengths that did not contribute to better functioning, but were still included in the poly-strengths index as they were part of the original research design.

A key element of resilience portfolios is their flexibility, at both the individual and community level. No one needs to be good at everything, and some strengths might resonate for some people or in some communities more than others. But everyone can put together a portfolio of strengths that allow them to thrive after trauma.

Insights From the Latest Resilience Portfolio Research

To date, 64 different strengths have been included in quantitative resilience portfolio studies. These span all four domains. At the bivariate level, all 64 strengths are positively and significantly correlated with some positive outcome (trauma symptoms, subjective wellbeing, posttraumatic growth, or HRQOL). However, only a few have consistently stood out in multivariate analyses across multiple studies, and some have shown unexpected complexity. Although in the second revolution, it turned out that virtually every kind of victimization or adversity that has been studied adds to your trauma dosage, in the third revolution, current evidence suggests that not all strengths are created equal. Below, I briefly summarize the state of the science for each domain.

Meaning Making Strengths

To date, 18 meaning making strengths have been examined in RPM survey studies, including constructs like future orientation, mattering, and generativity. As with the other domains, one of the most interesting findings to date is that most of them do not look very promising in existing resilience research. Most of them have seldom or never been significant in multivariate analyses.

By far the most successful predictor of resilience in this domain has been a *sense of purpose*. Sense of purpose, or finding something to do with your life, has been significant in the predicted direction more than any other single strength, with positive results in more than 2 out of 3 analyses, with positive results in eight countries (Faires, 2021; Hamby et al., 2018a, 2020a, 2023, 2024, 2025a, 2025b; Kelmendi & Hamby, 2024, Brooks et al., 2024, 2025; González Méndez & Hamby, 2021; Hébert et al., 2025; Schultz et al., 2024). It was also the single best predictor more than twice as often as any other strength. Closely related to sense of purpose, *hope*, or believing that things can be better in the future, has also performed well (Brooks et al., 2025; Hamby et al., 2025; Hébert et al., 2025). Another that has shown some promise but perhaps needs some measurement refinement is *moral meaning-making*—that is, deriving meaning by adhering to a code of conduct (Banyard et al., 2017; Williams-Butler et al., 2024). Scoping reviews of a wide range of populations have pointed to additional areas that need more study in the meaning making domain, such as *practicing cultural traditions* and *social activism* for meaning making (e.g., Hagler et al., 2025; Sabina et al., 2025).

Some constructs have demonstrated unexpected complexity in resilience portfolio research. Religious faith and spirituality are perhaps the most important example in the meaning making domain. Qualitative data and univariate analyses in quantitative surveys often show that greater religiosity and/or spirituality are associated with greater resilience and wellbeing (e.g., Piercy & Hamby, in press). However, in multivariate analyses with multiple samples, measures of spirituality and religious meaning making have shown significant effects in the unanticipated direction. That is, they indicate that greater levels of religion or spirituality are associated with worse wellbeing (Brooks et al., 2025; Hamby et al., 2024; Hébert et al., 2025). Some reviews of the resilience literature have also found mixed results (Hagler et al., 2025; Yoon et al., 2025). Like other constructs, such as social support, religion and spirituality can be great sources of comfort, but they can also be sources of rejection, victim-blaming messages, and sometimes, even victimization itself (Hagler et al., 2025; Pereda et al., 2024). It seems possible that in multivariate analyses, some of the unique variance is due to more negative aspects of spirituality and religion. It may be possible to better operationalize these constructs to identify the most helpful elements. Like most aspects of meaning making, this would benefit from more study in resilience research.

Regulatory Strengths

In the research conducted to date, we have also examined 18 different regulatory strengths, including assets such as coping, anger management, impulse control, and self-reliance. So far, the best-performing regulatory strengths in multivariate analyses are *emotion regulation* and *psychological endurance* (Brooks et al., 2024, 2025, Hamby et al., 2018b, 2020b, 2024, 2025a, 2025b; Hébert et al., 2025; Kelmendi & Hamby, 2024; Gonzalez-Mendez & Hamby, 2021; Gonzalez-Mendez et al., 2021). Regarding emotion regulation, we have found particularly promising findings for research on the understudied topic of *positive emotion regulation*, which refers to the ability to up-regulate emotions (Hamby et al., 2024). That is, to be able to cheer yourself up or sustain a good mood, versus being able to navigate distress or anger. After those, *coping* and *humor* show the most promise.

In terms of complexities, coping has shown some significant results in the unanticipated direction (Kelmendi & Hamby, 2024; Moisan et al., 2019). A scale on the Values in Action survey, Judgment, which also reflects use of the kinds of cognitive appraisals often assessed in coping research, has also had several significant results in the unanticipated direction (Brooks et al., 2025; Hamby et al., 2025; Hébert et al., 2025). Anger management is another with a significant result in the "wrong" direction (associated with worse functioning; Kelmendi & Hamby, 2024). It seems likely that one challenge with measuring constructs like these is that to score high on these scales implies a problem to cope with, or a prior experience of anger.

Interpersonal Strengths

In the interpersonal domain, *social support* was the only factor that we have studied that has been significant in the predicted direction in more than 50% of analyses (Brooks et al., 2025; Hamby et al., 2024, 2025; Hébert et al., 2025). However, this was only true for one particular measure of social support. Social support, of course, has long been recognized as a key element of healing and mental health. Yet, early RPM efforts, using conventional measures that just often ask about how big one's social network is or much assistance one could get, if sought, were also not very promising in multivariate analyses (Banyard et al., 2017; Hamby et al., 2018b; Moisan et al., 2019). Further, such measures are not even good at distinguishing between constructive versus unhelpful forms of support (such as peers encouraging delinquent behavior). We developed a new measure that focused on actual prosocial help received, and that is the measure that has performed well (Brooks et al., 2025; Hamby et al., 2024, 2025; Hébert et al., 2025). A second new measure, on helpseeking attitudes, has not shown promise (Hamby et al., 2020b, 2024). In a smaller set of studies, *loving communication* has also performed well (Hamby et al., 2025a, 2025b; Hébert et al., 2025; Ujvari et al., 2025), although not uniformly so (Brooks et al., 2025). One promising construct that has received relatively little empirical attention outside studies with helping professionals is *social leisure* (not just social support during times of distress; Piercy & Hamby, in press; Whittenbury et al., 2025).

An example of an unexpectedly complex construct in the interpersonal domain is kindness, which in multiple datasets has not shown any significant associations in the expected direction in multivariate analyses, and some in the unexpected direction. Other research has also found that kindness has unexpected associations with poor outcomes (e.g., Chérif et al., 2022). This may be because kindness can draw resources from one's own resilience portfolio, and if a person's resilience portfolio is not robust enough to ensure their wellbeing, then kindness (or other investments in other people) could take a toll on one's own health.

Environmental Strengths

The physical environment is the newest resilience portfolio domain (Banyard et al., 2025a, 2025b). This includes the natural and human-built environment, both of which are areas that have been historically neglected in much of psychology. In the environmental domain, by far the best supported strength is contact with green (or blue) spaces, such as access to parks, gardens, and forests, which is consistently associated with better physical and mental health outcomes in communities that have experienced adversity (Banyard, Rousseau, et al., 2025). Following qualitative analysis of how people spoke about the natural environment in some of our interviews (Hamby et al., 2022), we developed a scale of eco-connections, but this has not so far proved promising (Brooks et al., 2025; Hamby et al., 2025; Hébert et al., 2025; Ujvari et al., 2025). In future work, we are developing a revised version of eco-connections and self-report measures of access to green and blue spaces as well as positive elements of the built environment, such as walkability and easy access to healthy food.

Poly-Strengths

In addition to working to flesh out the scope of resilience portfolios and identify which strengths most support resilience after adversity, we have also assessed strengths dosage with poly-strengths. There have been successes and challenges. The poly-strengths variable has been a better predictor of outcomes than all but 7 specific strengths variables (out of 64), but has only been significant in approximately 1/3 of analyses. We think some of the complexities that we have previously discussed are contributing. Not all the 64 strengths we have measured (across studies) appear to be good promoters of positive outcomes after adversity. When factors with a significant negative association are included in the poly-strengths index, this will limit its ability to predict positive outcomes. This especially turned out to be true in studies that used the Values in Action (VIA) inventory, which we undertook to build some bridges between resilience science and a popular tool in positive psychology (Brooks et al., 2025; Hamby et al., 2025; Hébert et al., 2025; Ujvari et al., 2025). The VIA has 24 strengths, most of which turned out not to be good resilience portfolio predictors. The challenges here suggest that there is more to understand about what exactly are the kinds of things that help people overcome trauma. It also seems likely that there may be community and cultural differences about which strengths are most important–and the portfolio concept is designed to be flexible for adapting to different settings.

Do Resilience Portfolio Strengths Vary by Outcome?

Subjective (Psychological) Wellbeing. We have explored several different indicators of functioning in RPM research. For

subjective wellbeing, there has been a fairly dramatic difference in the variance explained by strengths versus adversities, with strengths explaining much more variance. Strengths—people's resilience portfolios—explain a much larger portion of variance. For example, in a sample from the southeastern U.S. (Hamby et al., 2018b), adversities explained 10% of the variance in subjective wellbeing, while resilience portfolios explained 48%. Similar patterns have been found in numerous other studies (Brooks et al., 2024; Faires, 2021; Hamby et al., 2024; Schultz et al., 2024; Ujvari et al., 2025). This includes studies conducted in the UK, Ireland, Canada, and Kosovo (Brooks et al., 2025; Hébert et al., 2025; Kelmendi & Hamby, 2024). Sense of purpose is strongly associated with greater subjective wellbeing, significant in almost every dataset that measured it. Hope also did well. Psychological endurance is by far the best predictor of subjective wellbeing among regulatory strengths, and social support received among interpersonal ones. Poly-strengths also performs well for this outcome. Many of the negative findings for spirituality were associated with this outcome. (Similar in large part to the overall patterns because the results for subjective wellbeing are a high proportion of the significant results in the predicted direction).

Posttraumatic Growth. Regarding explained variance, a similar pattern is found for posttraumatic growth—strengths explain substantially more variance than adversities. Notably, trauma dosage typically accounts for a much smaller percentage of the variance in posttraumatic growth than subjective wellbeing. For example, in Brooks et al., 2024, polyvictimization and financial strain explained only 5% of the variance in posttraumatic growth (not significant), but the resilience portfolio strengths, taken together, explained 43% of the variance in posttraumatic growth. Similar findings can be seen in other studies (Brooks et al., 2025; Hamby et al., 2018b; Hébert et al., 2025; Kelmendi & Hamby, 2024). Many of the same strengths are also good predictors of posttraumatic growth—sense of purpose, psychological endurance, social support received, and poly-strengths are the top 4 (again). However, there are some differences. Many of the negative findings for judgment were associated with this outcome. Religious meaning making (our measure) did better for PTG than for subjective wellbeing (positive results in Hamby et al., 2018a; Kelmendi & Hamby, 2024), but the spirituality subscale from the VIA again performed poorly (Brooks et al., 2025; Hamby et al., 2025; Hébert et al., 2025; Ujvari et al., 2025).

Trauma Symptoms. In contrast to subjective wellbeing and posttraumatic growth, resilience portfolio strengths explain similar or slightly larger amounts of variance in trauma symptoms in the datasets that included this outcome (Hamby et al., 2018a, 2020a, 2024; Moisan et al., 2019; Schultz et al., 2024). For example, in Hamby et al., 2020b, adversities explained 13% of the variance in trauma symptoms, while all strengths, together, accounted for 17%. The predictors for trauma symptoms were somewhat different than those for subjective wellbeing. Sense of purpose and poly-strengths were again good predictors, with higher scores associated with fewer trauma symptoms (Hamby et al., 2018a, 2020b, 2024; Moisan et al., 2019). However, psychological endurance was not significant in any of these datasets, and neither was social support. There were a few positive effects for emotion regulation and emotion awareness (Hamby et al., 2018b, 2020b, 2024). There were fewer significant effects in the unanticipated direction, but relational motivation was associated with worse symptoms in two datasets (Hamby et al., 2020a, 2024).

Health-Related Quality of Life. Research on resilience portfolios and health-related quality of life (HRQOL) has helped expand resilience research beyond psychological outcomes to physical wellbeing. HRQOL measures typically ask people to rate their overall health and report on the extent to which illness or pain has interfered with their lives in the previous 30 days. Despite moving to more physical symptoms, resilience portfolios explain a notable amount of variation in health-related quality of life. For example, in a study of U.S. youth, trauma dosage explained 7% of the variance in HRQOL (even in this young sample), but resilience portfolio strengths explained 14% (Hamby et al., 2020a). In other studies, strengths also accounted for double (or more than double) the variance as trauma dosage (Brooks et al., 2025; Faires, 2021; Hamby et al., 2023; Hébert et al., 2025). The pattern of strengths that predict HRQOL is different than for the more psychological outcomes, although sense of purpose, again, was often the best predictor (Faires, 2021; Hamby et al., 2020a, 2023, 2025). Endurance, however, was not a good predictor (significant only in (Hamby et al., 2025)). Positive emotion regulation (zest in the VIA) was significant in several analyses (Brooks et al., 2025; Hamby et al., 2020a, 2025; Hébert et al., 2025). No interpersonal strength was significant more than once in analyses predicting HRQOL. No strength was significant in the unexpected direction more than once, and poly-strengths was never significant. More needs to be done to explore strengths associated with physical wellbeing.

Implications for Future Research

Although resilience science has been around for more than four decades, in many ways it is still in its infancy. When my colleagues and I first started this research, I thought the challenging part would be narrowing strengths down to a key few that might become the targets of intervention. After all, there are many measures like the VIA, with its 24 subscales. But that has not turned out to be the case—most of the 60+ measures we have tried do not appear to be promising, and we are only carrying a handful into the next phase of our work, including sense of purpose, hope, psychological endurance, emotion regulation, social support received, and loving communication.

There is so much more we need to learn about all the ways that people manage to flourish after trauma. In some ways, the field has been overly restricted. There is the entire environmental domain, for which there are limited self-report measures available. Scoping reviews have been a source of several new ideas. Two recent scoping reviews of resilience among helping professionals both pointed to the importance of social leisure versus social support (Piercy & Hamby, in press; Whittenbury et al., 2025). In these less stigmatized populations, there was a recognition that a rich social life and robust social networks are key to helping them sustain their work, despite the exposure to secondary trauma (and whatever else they were exposed to). Yet, this is almost never measured in studies of people who experience other kinds of trauma. The same goes for cultural strengths, cultural identity, social activism, and many other strengths identified in scoping reviews (e.g., Hagler et al., 2025; Sabina et al., 2025). Much existing work on these topics has been qualitative and could be extended to include quantitative studies as well.

There is also a great need for research in a wider variety of communities. Much resilience research has been conducted through the lens of mainstream U.S. culture, or other individualistic societies of the global north. Although we have begun to expand RPM research to other communities, we need more study of what resilience looks like in collectivist cultures and other groups (Kelmendi & Hamby, 2024). Qualitative research is probably best suited for identifying resilience factors that have received little study, and then eventually hopefully turn some of these concepts into measures that can be tested in quantitative research. We also need more longitudinal studies and more studies that focus on developmental changes in assets and resources.

Implications for Intervention

One of the big benefits of the trauma dosage idea (in ACEs and polyvictimization research) was the way it advanced our understanding of the mechanisms underlying the negative consequences of trauma. One of the big benefits of the resilience portfolio idea is the potential for transforming our understanding about the mechanisms—and best approaches—to healing. We need to pivot, help people thrive, and move toward a science of healing (Hamby & Yoon, 2024). Below I briefly describe some interventions that have scientific support for promoting strengths in each resilience portfolio domain.

Interventions for Regulatory Strengths. Regulatory strengths have perhaps the most interventions with large bodies of evidence supporting them. Among these, mindfulness is rising to the top. Mindfulness is a complex phenomenon, but at the heart of it is the capacity to give non-judgmental, non-critical attention to the processes of our mind without trying to grasp or reject any particular response. Focusing primarily on meta-analyses that compare the results of many studies, mindfulness has been shown to increase key regulatory strengths, such as improving emotion regulation and executive functioning, and lowering reactivity, among other benefits (Arjona & Ungar, 2024; Gu et al., 2015; Zhang et al., 2021). Mindfulness reduces aggression among youth with an effect size that's bigger than most violence prevention programs (Tao et al., 2021). Like many interventions, the benefits are not limited to a single resilience portfolio domain. Mindfulness also helps with meaning making (Manco & Hamby, 2021).

The resilience portfolio approach emphasizes that there are many different combinations of assets and resources that can lead to thriving after trauma. If somebody doesn't like mindfulness, there are many other evidence-based choices. Yoga promotes emotion regulation (Menezes et al., 2015). Exercise promotes emotion regulation and coping (Bernstein & McNally, 2018).

Interventions for Meaning Making. Narrative interventions promote meaning making (Manco & Hamby, 2021), and narrative is a centerpiece of many evidence-based therapies (e.g., Cohen et al., 2012; Robjant & Fazel, 2010). Sharing one's traumatic experiences is an important component of healing for most people. Still, too much therapy keeps the focus there, without turning to the future and helping survivors put together the pieces of a good life. In addition to narrative and finding a safe space to tell someone your story, there are other ways to develop a sense of purpose in life.

To look forward, people need to develop meaning through roles, missions, and beliefs. Roles include parent, teacher, and coach. Missions can be trauma-related, such as working on reducing the global burden of violence, but any work to strengthen communities, such as volunteering at a library or food bank, can create a sense of purpose too. Mentoring, for example, promotes meaning making (Kennett & Lomas, 2015). One way to develop meaning making that emerged from scoping review work was participating in cultural traditions, such as participating in ceremonies, coming of age milestones, and foodways (Sabina et al., 2025).

Interventions for the Interpersonal Domain. There are three general approaches to building interpersonal strengths. The one that's been historically most used is helping people improve their individual social skills, such as classroom-based social and emotional learning programs (Mahoney et al., 2018). However, interventions can also directly help people build their interpersonal relationships, for example gratitude visits (Khanna & Singh, 2019; Seligman et al., 2005) and engage in social leisure (Whittenbury et al., 2025). Social justice activities can strengthen community relationships as well as create meaning.

Interventions for the Environmental Domain. The best-studied environmental intervention is the benefit of increasing contact with green spaces. Sometimes this is even done by creating

more green spaces, such as urban gardening efforts. As with these other interventions, evidence comes from many different types of studies. Considerable research shows the benefits of adding more contact to green and blue spaces to one's resilience portfolios (Banyard, Kelmendi, et al., 2025; Engemann et al., 2019). Other studies show that exercising in a natural environment is better than the same amount of exercise in an indoor environment (Niedermeier et al., 2017). *Shinrin yoku*, or forest bathing, was developed in Japan, with early studies by the physician Li (2010) and others providing evidentiary support. Forest bathing involves spending mindful, relaxing time in natural environments. Although this might include some walking, the focus is on being in the natural environment versus exercise. Li and others have shown in numerous experimental studies that forest bathing has health benefits compared to pleasant days out in urban environments, such as visiting a museum (Li, 2010, 2022; Li et al., 2022). Spending time in green and blue spaces improves our immune system and reduces other markers associated with allostatic load, probably from a range of mechanisms such as exposure to beneficial organic compounds and bacteria (Li, 2010; Payne & Delphinus, 2018), improved air quality and exposure to negative ions (Xiao et al., 2023), and exposure to waves, breezes, or other sounds that can reduce some symptoms (e.g., Thoma et al., 2018). Also, in terms of the physical environment, people are starting to recognize that aspects of the built environment can affect our wellbeing too, from walkable cities to better indoor lighting (Banyard, Rousseau, et al., 2025).

Conclusion

Our progress in understanding and ameliorating trauma and resilience can be measured through three big ideas. The first big idea was that violence and trauma were much bigger public health problems than we realized, with tolls that rival that of cancer and heart disease. The second big idea showed that much of the costs of trauma come from our trauma dosage—our cumulative lifetime exposure. Even what were once considered minor exposures, like peer bullying and witnessing violence, add to our lifetime dosage and can exact long-lasting harms. The third big idea—the one that is currently transforming the science of trauma and resilience—is that we can counter trauma dosage with strengths dosage. This idea, expressed in the resilience portfolio model as well as other work, is still developing, with new research providing insights into which strengths are most helpful for resilience. We can overcome the negative consequences of trauma, including even increases in allostatic load, by bringing more good things to our lives. This third idea has the potential to not only transform our science but also our interventions for trauma and to help many more people flourish despite the adversities they have endured. It is a hopeful time to be doing this work.

Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author received no financial support for the research, authorship, and/or publication of this article.

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