



How Do You Become Resilient? A Critical Realist Explanation of the Youth Resilience Process

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Accepted: 29 September 2024
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Abstract

Adversities serve as risks, but also opportunities to acquire capacities to adjust positively in future stressors. There is now considerable agreement that resilience should be viewed as a process. However, a key question remains: Why do some individuals exhibit resilience while others do not? The present study aimed to provide a detailed description of the youth resilience process and theorized on the specific mechanisms that support positive adjustment following adversities in early life. In-depth interviews were conducted with a purposive sample of 34 young adults with adverse childhood experiences; analysis followed a paradigm of critical realism. Results were organized in three levels of realist ontology to provide hierarchical and substantive support of findings and theorizations. We propose the Youth Resilience Process Model (Y-RPM), which integrates and builds on existing theories and concepts to explain the mechanisms and different pathways of internal processes that foster resilience among youths.

Keywords Resilience · Youths · Young adults · Adverse childhood experience · Critical realism · Youth Resilience Process Model

Resilience is the ability to survive and thrive despite significant adversity (Earvolino-Ramirez, 2007). Grounded in developmental psychology, resilience was first used to describe children who were exposed to intense and often chronic stress and trauma (e.g., abuse and neglect), but were observed to withstand the negative effects of risk exposure and “bounce back” in the face of adversity (Windle, 2011). There is now considerable agreement that resilience should be viewed as a process as opposed to a fixed trait (Rutter, 2012), particularly in youths. From a contemporary multi-system perspective, the capacity for resilience changes and advances over the course of development based on the functions of a multitude of interdependent systems, spanning

from molecular to the wider ecological levels, that continually interact and transform as a dynamic and complex adaptive system (Masten, 2014). Research in the past two decades also underscored how resilience must be viewed in its total, as successful adaptation at one system or level of assessment (e.g., age, time, health, and context) does not necessarily equate with resilience in other or across all systems (Masten et al., 2023). Importantly, resilience is a culturally sensitive process given that perceptions of, negotiations for, and allegiance with cultural resources that support positive adaption are salient to whether and how wellbeing can be achieved after stress exposure (Theron et al., 2022).

Although the extant literature has highlighted the complexities in understanding differential adaption to adversity, they also present challenges in identifying the specific mechanisms that underlie the process and promotion of resilience, or the heterogeneity in how resilience can manifest after a stressful childhood event in different contexts. This knowledge gap precludes designing and targeting interventions to effectively strengthen resilience among youths at the individual level, particularly for those exposed to significant stressors early in life. The present study aimed to provide a detailed description of the process of resilience and the specific mechanisms that support positive outcomes

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and development following childhood adversities. Using a critical realist approach, we present a novel model to explain the mechanisms and different pathways towards resilience, and discuss how these internal processes relate to or interact with external factors, such as context and culture, in stress adaptation.

Background

Adverse childhood experiences (ACEs), such as maltreatment and growing up in dysfunctional households, are pervasive, often co-occur, and pose a significant threat to health and wellbeing across the lifespan (Hughes et al., 2017; Kessler et al., 2010). However, ample studies demonstrated that exposure to moderate levels of adversity can have positive effects in preparing individuals for future challenges and strengthen their resilience (Crane & Searle, 2016; Seery et al., 2013). Indeed, the mastery motivation system is a strong driver in building youth resilience, where their capacities for positive adaptation are continually shaped and transformed by their experiences, the wider circumstances (e.g., the type and extent of adversity), and successful interactions with the environment (Masten, 2014). Thus, adversities early in life serve not only as risks but also opportunities to acquire capacities to adjust positively in the face of future stressors. This is commonly referred to as the “steeling effect,” where intermittent exposure to negative experiences decreases vulnerability to subsequent stresses and adversities (Rutter, 2012). However, it is unclear whether and how some adversities lead to improved adaptation, and what are the key ingredients required for resilience to occur (Masten et al., 2023). Ultimately, a key question remains: Why do some individuals exhibit resilience after ACEs while others do not?

Prior research suggests there are multiple pathways and associated factors that foster resilience, and that there is no single means of maintaining or returning to a state of equilibrium following highly aversive events (Bonanno & Diminich, 2013; Luthar et al., 1993; Rutter, 1987). Advances in statistical modeling techniques have also revealed various patterns of resilience, such as breakdown with recovery, stress resistance, or posttraumatic growth (Infurna & Jayawickreme, 2019; Masten & Cicchetti, 2016; Masten & Narayan, 2012). Although these findings provide general representations of a resilient response, the nuances in how the process of resilience actually manifests under different individual constitutions, contexts, and conditions remain unclear. The challenge in pinpointing the precise mechanisms that foster resilience are exemplified by three principles grounding the multisystemic social-ecological interpretation of resilience (Ungar et al., 2013).

First, the principle of equifinality posits that there are substantial permutations of proximal processes and factors that can lead to different but equally viable expressions of resilience; these processes and factors also span across multiple systems and interact to produce different outcomes. Second, the influence of such processes and factors can vary by individual contexts and circumstances; thus, different risk and protective factors do not always influence outcomes in the expected direction or magnitude. Third, context and culture moderate the resilience process as its definition, manifestation, and promotive factors are locally specific. Together, these principles underscore the need to understand adversity, adaptation, and resilience in relative, situational, and attributional terms (Shaikh & Kauppi, 2010). There is also a need to clarify and consolidate potential variations on the proximal (i.e., internal) processes and factors that support resilience to understand how they relate to or interact with the “constellations” or “profiles” of external resources that may be required for positive adaptation to occur at the individual level (Ungar et al., 2023).

The Systematic Self-Reflection model of resilience strengthening (Crane et al., 2018) was proposed as a unifying and testable model on the internal process of resilience building after stress exposure. This model posits that a stressor invariably triggers an initial psychological stress response (e.g., distress), which provides the opportunity, through systematic self-reflection, to learn about one’s personal response to stressors. In turn, insight and awareness of one’s initial response to the triggering event will enhance one’s capacity to identify and mobilize adaptive coping and emotion regulatory strategies to support resilient outcomes. In this regard, resilience may be viewed as an internal process that begins with individuals’ insight on their own patterns of initial response to stressors, which is an essential precursor to identifying appropriate strategies, mobilizing resources, and executing subsequent responses necessary to “bounce back” from the adverse event. However, a notable limitation of this model is that the initial response to stressors was conceptualized along a continuum from mild or no stress, to moderate and significant distress, despite the fact that initial psychological responses to threat are highly subjective and idiosyncratic (Oken et al., 2015).

Perhaps a major barrier to understanding the divergent pathways towards resilience relates to the lack of understanding of how the internal process of resilience actually begins. Although resilience can be harnessed and demonstrated in a myriad of ways, transient perturbations in normal functioning invariably arises after initial exposure to stressors, even among highly resilient individuals (Bonanno, 2004). In fact, initial responses to threats (e.g., avoidance, dissociation, or submission) are coping strategies that were developed through evolution to ensure immediate self-preservation (Fisher, 2001), but these highly adaptive

states become problematic when they persist and become maladaptive traits over time (Perry et al., 1995). Therefore, it is possible that the capacity to demonstrate resilience is dependent upon an individual's immediate response to the stressor; their ability to recognize their response and identify appropriate physical, psychological, and social resources necessary to preserve or enhance functioning and development; and, subsequently, their skills to negotiate relational and contextual resources in culturally meaningful ways to sustain positive adaptation and outcomes (Liebenberg, 2020; Masten et al., 2023; Ungar, 2008; Ungar & Theron, 2020; Wong & Wong, 2012). To date, no known research has attempted to specify typologies of different initial responses to adversities among younger people, which may be salient to understanding whether and how pathways towards resilience manifest differently across individuals and contexts. Further, the different typologies of initial responses and the key ingredients and causal mechanisms that create and, subsequently, counter these initial responses to support resilient outcomes have not been clearly delineated. A detailed understanding of these factors and potential pathways is crucial to designing both universal and targeted interventions to support resilient outcomes in youths exposed to aversive early life circumstances.

The Current Study

The present investigation aimed to explore and theorize on the potential mechanisms underlying the resilience process among young adults exposed to significant early life adversities. The overarching research question for the current investigation was “How did young adults with ACEs respond to their adversities, and what did/ does resilience look like in the past and at present?” Researchers drew on the paradigm of critical realism as an approach that “combines observation and interpretation in search for causation” (Koopmans & Schiller, 2022) to understand resilience as a dynamic process that varies by individuals, contexts, and the interactions between them. This philosophical approach captures how participants perceive their realities, including (i) observable factors related to personal characteristics, behaviors, and experiences and (ii) unobservable subjective mechanisms of personal ideology; value commitments; mental and emotional states; and ways individuals are situated with others to appraise and act (or not act) towards social structures (e.g., social norms or cultural conventions) (Maxwell & Mittapalli, 2010). According to critical realist philosophy rooted in works of Bhaskar (1975, 2013), it is often the subjective mechanisms that are not conventionally measurable, which have emergent properties (i.e., a temporal but persistent entity, not due to its parts, but due to its structural relations

between its parts, having causal powers) when they interact with the environment (Elder-Vass, 2010).

The goal of employing a critical realist lens is to explore the underlying causal mechanisms and the interplay between agency (i.e., personal) and structural (i.e., contextual) factors to explain how properties might emerge and aggregate to form an outcome (Elder-Vass, 2010). Critical realism acknowledges causation is nonlinear and derives from complex combinations and interactions of multiple factors, which must be present under specific conditions for an outcome to occur (Clark et al., 2008). Importantly, akin to the multisystem perspective of resilience, critical realism posits causal mechanisms occur in an “open system” that is complex, unpredictable, and entangled in social contexts, which operates within a causal network of interacting forces that can counteract or reinforce each other under different conditions (Schiller, 2016). Thus, causal mechanisms and enduring tendencies are explored to generate theorizations on the factors and conditions that are necessary for certain properties (e.g., resilience) to emerge for further empirical evaluation.

Method

The present investigation was an in-depth analysis of qualitative data collected from a sequential explanatory mixed-methods study that aimed to examine resilience and mental wellbeing of Chinese young adults with ACEs in Hong Kong (Ho et al., 2019, 2021). Given the individual and contextual heterogeneity of early adversities and resilience processes, qualitative methods are deemed most suitable to explore and dissect the potentially vast set of mechanisms that promote or hinder expressions of resilience over time (Ungar, 2003). The EQUATOR recommendations to Standards for Reporting Qualitative Research (O'Brien et al., 2014) were followed for transparency of reporting in this manuscript. This study was approved by the first author's university ethics review board.

Participants and Procedures

We conducted the study among Chinese young adults in higher education, and recruited associate and bachelor degree students between ages 18 and 24 from two major universities and their affiliate community colleges in Hong Kong. With a population of approximately 7.4 million people, 94% of Hong Kong residents identify as Chinese; 61% of adults had at least one ACE (Ho et al., 2024); and over 40% of university students had moderate and above levels of depressive and anxiety symptoms (Shek et al., 2022). The pervasiveness of ACEs, the high rates of mental health problems among students in higher education, and

the importance of building resilience in emerging adulthood prompted targeting this setting and population.

Using a two-phase design, quantitative results were initially obtained from a larger convenient sample of young adults, and a smaller sample of these participants with ACEs was purposively selected to qualitatively explain those results. Between April and June of 2017, 433 participants completed an online survey that included the Adverse Childhood Experiences—International Questionnaire (World Health Organization, 2016) and the Connor-Davidson Resilience Scale-2 (Connor & Davidson, 2003). Among these participants, 131 reported at least one ACE and agreed to be contacted again for a follow-up interview. Purposive criterion sampling was employed by creating strata based on participants' reported levels of resilience in the quantitative survey (i.e., high = 6–8; medium = 4–5; and low = 0–3) and participant sex, as informed by prior research demonstrating gender differences in factors that promote resilience (Hartman et al., 2009). Nine participants with one ACE from high, medium, and low resilience groups were first interviewed to pilot and refine the interview guide by adding more prompting questions. Then, the remaining participants were approached based on their resilience level and number of ACEs, with those who reported the highest number of ACEs recruited first. Recruitment continued until no new information related to resilience was elicited after interviews with 32 participants, and 2 more participants were interviewed to ensure theoretical data saturation (Sandelowski, 1995). In total, 34 participants were included in this analysis.

Face-to-face individual semi-structured interviews were conducted in Cantonese Chinese at a private room in the first author's university and at a time that was convenient for the participants. All participants provided written informed consent for their participation. At the end of the interview, each participant received a list of mental health resources available in the community and a HKD\$350 supermarket coupon in remuneration. Before data collection, three female research assistants with counseling experience and no previous relationship with the participants received training in a 2-hour workshop on qualitative interviewing to ensure interview quality and consistency. During the interviews, participants were asked to recall a challenging time in their childhood and describe how they faced those challenges. Prompts were used to further elicit details on how they responded to the adversity, how the adversity was perceived to have impacted them, and why.

In-depth interviews lasted between 45 and 180 min. Field notes were taken within 24 hours of interviews to record non-verbal communication and any relevant impressions of the participants. All interviews were audio-recorded and transcribed into traditional Chinese by a certified transcriptionist. Data was organized and managed using NVivo11 (QSR International, 2010). When required for analysis and

dissemination, translations into English were conducted and verified by two team members (GH, AC) who are bilingual English and native Cantonese Chinese speakers.

Data Analysis

Analysis followed a paradigm of critical realism and used analytical methods of conventional content analysis (Leung & Chung, 2019). According to Elder-Vass (2010), multiple hierarchies of knowledge can be stratified into three realist ontologies: the “empirical,” the “actual,” and the “real.” Briefly, the “empirical” is what we experience (i.e., observe and tell each other). The “actual” refers to an existence of events, whether or not we are able to factually measure or experience it. Importantly, critical realism is concerned with the “real” in reference to what is transitive, and acts as underlying causal mechanisms in their relationships between observed variables (the empirical and sometimes the actual) to generate phenomena (Elder-vass, 2010). The authors worked inductively to analyze available evidence of the “empirical” and the “actual.” In this iterative process, abduction was used to theorize and generate hypotheses on the underlying mechanisms (“the real”) that produce observable outcomes. Abductive reasoning was performed to systematically combine observable evidence with theoretical knowledge to create potential explanations for whether and how resilience emerges (Eriksson & Engström, 2021). Together, the findings were consolidated to produce an “explanatory structure” (Hartwig, 2015) of mechanisms, pathways, and tendencies generative of resilience (i.e., the Youth Resilience Process Model; Y-RPM) for retroduction, that is, further empirical testing (Nairn, 2012).

To ensure rigor of our analysis, the project team used systematic methods of content analysis. First, two team members (GH, AC) read all of the interviews to assess overall comprehension of the data and assure transcription accuracy. To establish credibility (Lincoln & Guba, 1986), three interview transcripts of participants with high, medium, and low resilience scores were independently coded by two members (GH, AC) and discussed for consensus with a third team member with qualitative expertise (DL). A preliminary coding scheme was established through an iterative process by coding for comprehension, synthesis (grouping using constant comparison), and theorization (grouping into patterns), and discussed among all project team members. Finally, the remaining transcripts were independently coded by two team members (GH, AC). Intermittently, the project team reviewed coding for emerging patterns and discussed confirmability and plausibility of synthesis and theorization (Lincoln & Guba, 1986). Reflexivity was maintained through theoretical memos and coding discussions with all team members with backgrounds in mental health nursing, psychiatry, and psychology. Transferability of findings

(Lincoln & Guba, 1986) are supported by a detailed description of participant characteristics (see Table 1). Trustworthiness was maintained through in-depth interviews, prolonged immersion in data analysis, and maintaining an audit trail of all analytic decisions (Lincoln & Guba, 1986).

It is important to note the researchers' characteristics and reflexivity in the study process. The primary team consisted of three self-identified Chinese women; two of which had a professional background in mental health and are nurse educators and researchers (one with expertise in mixed methods and the other in qualitative methods), while the third had a background in psychology. The other two members of the team self-identify as men from European backgrounds; these members drew on their expertise as mental health clinician-researchers to support descriptive and interpretive validity. None of our research team members had any direct authority with the participants.

Researchers' critical realist reflections and observations are also noted when considering the circumstances of how the participants were socially and developmentally situated to respond to the interview questions. First, although some of the childhood challenges described by the participants did not specifically relate to an ACE (e.g., problems in school, peer relationships), this information was retained for analysis as the authors acknowledge that those stressors were cast against a backdrop of ongoing ACEs in the participants' childhoods. Second, a sizeable list of environmental risk and protective factors of resilience (i.e., positive and negative interpersonal relationships, opportunities or resources available in the wider social milieu) was compiled. However, we observed that the effects of these risk and protective factors did not consistently support or hinder resilience in the direction as expected (e.g., while housing instability precluded some from developing a sense of identity and belongingness, it motivated others to build a stable home for their future family). This further supports the notion that the impact of these factors varies by function and context, and that the external resources necessary to build capacity for resilience are highly individualized. Therefore, we focused our analysis exclusively on mechanisms that fostered the internal processes of resilience.

Results

The characteristics of the 34 participants are described in Table 1. There were 18 females and 16 males; half of them were bachelor's degree students; and their average age was 20.5 years ($SD = 1.5$; range = 18–24). Among them, 16 participants were selected from the high resilience group, 12 from the medium resilience group, and six from the low resilience group. The average number of ACEs was 3.4

($SD = 2.1$; range = 1–9); nine participants had one ACE, nine had 2–3 ACEs, and 16 had 4 or more ACEs.

The final codebook comprised 555 individual codes that were later merged into 33 groups and 91 sub-groups. Patterns between these groups and sub-groups were developed by drawing vertical and horizontal linkages to create meaning and generate theorizations on the underlying mechanisms of resilience. The labels of the groups and sub-groups relevant to the data presented below are presented in Table 2.

Building on the Systematic Self-Reflection model of resilience strengthening (Crane et al., 2018), the present analysis was performed on a core assumption that resilience, as a process, begins when a threatening event triggers a response for immediate self-preservation. Although this initial response is highly adaptive and protective, remaining in this heightened state threatens future functioning and healthy development. Our analysis revealed aspects of commonality and points of divergence in the initial response to adversity, and how the resilience process was ushered forward based on those initial responses through different underlying mechanisms.

To provide hierarchical and substantive support of descriptions and theorizations on the resilience process, the results were organized based on the three levels of realist ontology. First, "the empirical" describes four patterns of initial response to adversities, which were labeled (1) *Boast and Undermine*, (2) *Evade and Disengage*, (3) *Ruminate and Obsess*, and (4) *Conform and Please*. Second, "the actual" describes the overlapping and distinct dimensions that were consistently observed to generate the four initial response patterns. Third, "the real" provides theorizations on the underlying causal mechanisms that usher forward the resilience process towards enhanced and sustained positive adaptation. These findings are consolidated and presented as a conceptual model at the end of the "Results" section (see Fig. 1).

Typologies of Response to Adversities—The "Empirical"

The following describes four patterns of initial response to childhood adversities. An exemplary quote is provided for each response typology; additional supporting quotes are presented in Supplementary Table 1. Of note, we observed that some participants continued to exhibit the same response patterns when faced with a challenge to this day, while others were able to describe their response as a matter of hindsight. Some participants' descriptions also suggest that it is possible to assume more than one response pattern when facing a stressor (i.e., hybrid response) and participants with multiple ACEs described assuming different response patterns after different stressors throughout their childhood. These observations suggest initial responses to

Table 1 Characteristics of interview participants ($n = 34$)

ID	Resilience score	Age/gender/degree program	ACE score	Physical abuse	Sexual abuse	Emotional abuse	Physical neglect	Emotional neglect	Domestic violence	Family member mental illness	Family member incarceration	Family member substance misuse	Parental death or separation	Bullying	Community violence	Collective violence
High Resilience (score: 6–8)																
H01	8	21/female/bachelor	4	x					x				x			x
H02	7	21/female/bachelor	5	x	x			x	x							
H03	7	19/male/associate	5	x					x	x					x	x
H04	7	18/male/bachelor	4	x	x			x	x							
H05	7	20/female/bachelor	2		x								x			
H06	7	22/female/bachelor	1		x											
H07	6	20/female/bachelor	7	x	x				x			x		x		
H08	6	20/male/bachelor	5		x					x		x				
H09	6	19/female/associate	4	x	x				x							
H10	6	23/male/associate	4		x			x							x	x
H11	6	19/female/associate	4	x		x			x			x				
H12	6	19/male/associate	3	x	x									x		
H13	6	20/male/associate	3					x		x				x		
H14	6	19/female/associate	3		x				x							
H15	6	20/female/bachelor	1			x										
H16	6	24/male/bachelor	1						x							

Table 1 (continued)

ID	Resilience score	Age/gender/degree program	Adverse childhood experiences (ACE)													
			ACE score	Physical abuse	Sexual abuse	Emotional abuse	Physical neglect	Emotional neglect	Domestic violence	Family member mental illness	Family member incarceration	Family member substance misuse	Parental death or separation	Bullying	Community violence	Collective violence
Medium Resilience (score: 4–5)																
M01	5	20/male/bachelor	5	x	x	x	x				x					
M02	5	21/female/associate	5	x	x	x	x							x		
M03	5	21/male/bachelor	4	x						x						
M04	5	21/female/associate	4	x	x	x	x								x	
M05	5	19/female/bachelor	1			x										
M06	5	20/male/associate	1												x	
M07	5	20/female/associate	1	x												
M08	4	19/male/associate	3	x									x			
M09	4	19/female/associate	2									x				
M10	4	21/male/bachelor	2	x							x					
M11	4	20/male/associate	1	x												
M12	4	22/male/bachelor	1												x	
Low Resilience (score: 0–3)																
L01	3	19/male/associate	9	x	x	x	x				x			x		x
L02	3	23/female/associate	8	x	x	x	x	x							x	
L03	3	23/female/bachelor	6	x			x									x
L04	3	21/male/bachelor	2	x			x							x		
L05	3	23/female/associate	2		x											
L06	3	21/female/bachelor	1												x	

“X” indicates exposure to that ACE

adversities are dependent upon the nature of the event, their existing capacity to adapt, and their individual tendencies to respond to adversities in specific ways.

Importantly, although these initial responses may be viewed as negative or socially unfavorable in typical conditions, in the present context, they are considered highly adaptive autonomic reactions triggered by a significant and serious threat (whether actual or perceived). Therefore, the following descriptions should be interpreted as protective measures that were adopted and deemed necessary for immediate self-preservation for that individual and at that particular moment in time based on their personal propensities, past experiences, and the context of their adversity and surrounding environment.

Boast and Undermine This response was exemplified by boasting about themselves, undermining the adverse experience and the people involved, and disguising the adversity as a nuisance or “annoyance.” Many of these participants purposely projected expressions of confidence, pride, and high self-regard to maintain a positive image of themselves in front of others, particularly at times of distress. To create a sense of self-assurance, they continually reminded themselves that they were right, that they were better than others, and that they did not care how others perceived them. A notable behavior signature of this response typology was to explicitly maintain that one was not at fault and to assign blame on others. At the same time, the seriousness and impacts of negative childhood events were often minimized. In fact, participants who continued to exhibit this response pattern at the time of interview rarely disclosed their ACEs directly, or described those events as “blurry” and unworthy of mention. Despite attempts to minimize the event, they often exhibited intense negative emotions (e.g., anger and hatred) towards those who wronged them. Some even described their detailed thoughts about how perpetrators should be punished.

My parents did not fulfill their responsibility. I mean they brought me to this world, but if you don't want to go through the hard work to raise me then you shouldn't have given birth to me. If you choose to do this but not assume the responsibility, then you're just throwing all the burden onto other people and that is wrong. (H11)

Evade and Disengage This initial response was marked by avoidance and distancing of self from others and detaching their thoughts and feelings from the negative event. These participants described setting rigid boundaries between themselves and others, and relying entirely on themselves to handle problems. This over-reliance on the self was a noted behavior signature of this response pattern. These

participants distanced themselves from others because they viewed that sharing their troubles and feelings with others was futile, and that they were certain they were the only ones who can solve their own problems. In isolating themselves and without the means to effectively cope with their negative emotions, these participants described diverting their focus to other tasks or activities, such as studying, exercising, working multiple jobs, or video gaming, to disengage from their problems. Some participants also described their experiences engaging in risky behaviors (e.g., experimenting with alcohol or illicit substances, casual sex, and self-harm), which they acknowledged were done to escape from their problems and to numb their thoughts and feelings.

It's like nobody can understand, so I just swallowed all the emotions. This feeling is the same as forcing yourself to memorize everything in the books that you don't understand, and that's it. Now I realize I do need someone for support to help me think more clearly. (L02)

Ruminate and Obsess Some participants were able to vividly recall and describe the details of their adversities, which stemmed from ruminating and obsessing over the details of the negative event. They described feeling helpless because the images of these events and their negative emotions were persistent and easily triggered, which were painful, disturbing, and beyond their control. Although many of their adverse experiences were, by nature, senseless (e.g., abuse) and inescapable (e.g., household chaos), these participants ceaselessly questioned “why” as a strategy to make sense of the events and their emotions. In tandem, they were exceedingly judgmental towards themselves and served as their own worst critic, thus turning their rumination and obsession into a form of self-punishment. As a result, these participants also described feelings of guilt, shame, and regret. The behavior signature of this response was a strong disposition to blame oneself for their own, as well as others', misfortunes. In their attempts to find meaning in and explanations for their adversities, they instead found faults and limitations in themselves to help rationalize their experience, thus perpetuating the cycle of ruminative and obsessive thinking.

I thought my parents had me at a time when I shouldn't be born (under China's One Child Policy)... I was something that is bad. In any case, I am something stupid and bad, which made my family bad. I am a bad child, so I thought this is why they treated me that way. (L03)

Conform and Please This response pattern was marked by a purposeful pursuit to accommodate and meet the expectations of others while disregarding one's needs and feelings.

Table 2 Labels of groups and sub-groups by level of realist ontology

	Group labels	Sub-group labels	Group labels	Sub-group labels
Level 1: The Empirical	Typologies of response to adversity		Typology-specific mechanisms of resilience	
	Boast and undermine	Maintaining a pridelful and confident image Being self-righteous Minimizing the adversity *Blaming others	Forgiveness	Finding closure and repairing relationships Understanding and forgiving others Accepting responsibility for reactions and feelings
	Evade and disengage	Hiding and avoiding others Handling problems alone Distancing self from problem or reality *Over-reliance on self	Support-seeking	Reaching out to share and connect Taking advice with an open mind Recognize own needs when seeking help
	Ruminate and obsess	Vivid recall of adversity Focusing on the past Feeling helpless *Blaming self	Self-appreciation	Praising oneself for overcoming past challenges Taking ownerships of accomplishments Identifying the positive things in life
	Conform and please	Obedying and satisfying others Yearning for acceptance and recognition Disregarding own needs *Over-reliance on others	Boundary-setting	Finding safe and reliable companionship Create meaningful connections Learning to negotiate and say "no"
	Factors generative of initial response typologies	Rigid boundaries between self and others Exceedingly high standards and expectations Overriding emotions through logic Lack self-agency and direction Negative perception of self Insecurity and inferiority	Trust others	Seeing the good in people Believing things will be okay Tolerating ambiguity and letting go of ideals
	External solution-seeking	Focusing on others' perception of self Avoiding rejection and humiliation Distorted sense of self-worth	Trust self	Identifying own goals, strengths, and motivations Taking charge of self and own wellbeing Believing one deserves kindness and happiness
	Internal solution-seeking	Hyper-focus on the self Reclusive and lonely Disconnecting from people and surrounding	Nurture Self	Knowing what oneself needs and wants Disregarding others' actions and expectations Focus on understanding and caring for oneself
			Nurture others	Empathizing and being considerate of others Helping others in need Preventing others from experiencing adversity
	Level 2: The Actual			Insight and acceptance
			Motivation and commitment	Identifying source of motivation Taking initiative to change Commitment to excel
			Perseverance and courage to move forward	Forging ahead despite challenges Belief that oneself can overcome Looks forward to and plans for the future
		Global mechanisms of resilience		

*Behavior signature

These participants appeared to conform and please out of their fear of others and their worries about others' negative perceptions of them (e.g., disappointment, pity). In turn, they pushed themselves to "try harder" to please and meet others' expectations, or to comply with and tolerate others to avoid conflict. These participants were keenly sensitive and observant of others' behaviors, and adjusted their behaviors accordingly to satisfy others, often at the expense of their own wellbeing. The behavior signature of those who conform and please was their over-reliance on others to find comfort, stability, and resolution. These participants often described a yearning to simply be with others, even those who exerted a poor influence on their lives. In fact, these participants tended to blur boundaries between themselves and others, some even to the extent of trying to please their abusers or knowingly engage in harmful or delinquent behaviors when pressured by peers. For many of these participants, conforming and pleasing others was their means of maintaining a sense of acceptance, existence, and personhood.

I am the type that is very afraid of not having friends, so I always accommodated other people. My bottom line may be very low, or perhaps I didn't even have a bottom line or didn't know how to say no. I'm still like that now, I'm used to not wanting to say no to others. (H09)

Underlying Factors Generative of Initial Response Typologies—The "Actual"

Two dimensions generative of the different response typologies were uncovered based on the similarities and distinctions observed within and across the four response patterns. They were labeled (1) *dictating versus relinquishing control* and (2) *internal versus external solution seeking*. These dimensions are organized orthogonally, such that their interactions combine to produce a bi-dimensional framework generative of each response typology (as depicted in Fig. 1). It appeared that a strong disposition towards any extremes of these continua may be causal for persistent exhibition of the same response typology or related sets of hybrid-type responses. For example, an individual with a strong disposition towards dictating control may often exhibit a response characteristic of two related response typologies—"evade and disengage" and "boast and undermine."

Dictating Versus Relinquishing Control This dimension relates to the extent to which participants attempted to exert control over their appraisal of and response to the event. On one end of the continuum, individuals dictated control by using their logical and personal conclusions about the

world to draw clear, and often rigid, demarcations between right versus wrong, and self versus others. These individuals also set very high standards and expectations for themselves and others, which was consistently observed in two response typologies (i.e., *boast and undermine, evade and disengage*). Although representations of dictating control differed across the two typologies, both response patterns were driven by the use of logical reasoning to exercise and maintain control over negative emotions (i.e., override or suppress), views about the adversity (i.e., minimize or avoid), and relationships with others (i.e., blaming others or being overly self-reliant).

The other end of this continuum is marked by relinquishing control over the adversity and their response to it, and is represented by two response typologies (i.e., *ruminates and obsess, conform and please*). Relinquishing control underscores a lack of personal agency in directing one's thoughts and feelings, and the inability to independently determine a sense of self-worth. Thus, those who relinquish control often described an intense sense of insecurity or inferiority, and the inability to exert control, be it their thoughts and emotions (i.e., rumination) or their self-appraisal (i.e., desire for recognition from others).

Internal Versus External Solution Seeking This dimension relates to seeking solutions and restitutions from internal versus external sources (i.e., self versus others) after an adverse event. Indeed, childhood adversities unequivocally endangers one's sense of "wholeness"; thus, an immediate response is to seek out solutions that would restore and "make one whole" again. Underlying two response typologies (i.e., *evade and disengage, ruminate and obsess*) is the tendency for solution-seeking to turn inwards, such that one looks for answers and solutions from within oneself. This includes finding faults in themselves to help rationalize the experience or an over-reliance on the self to handle problems on their own. In both instances, internal solution-seeking is a reclusive and lonely exercise, preoccupied by seeking restitution alone, which leads to disconnecting from other people, the surrounding environment, and, at times, even reality and themselves.

On the other hand, some sought solutions from external sources, such that the solution to move forward from the adversity rested on others, especially by maintaining or changing how others should perceive them. External solution-seeking also stems from a distorted and skewed sense of self-worth. For those who *boast and undermine*, their solution was to find fault and assign blame on others to protect their image, while those who *conform and please* sought out companionship, attention, and recognition from others

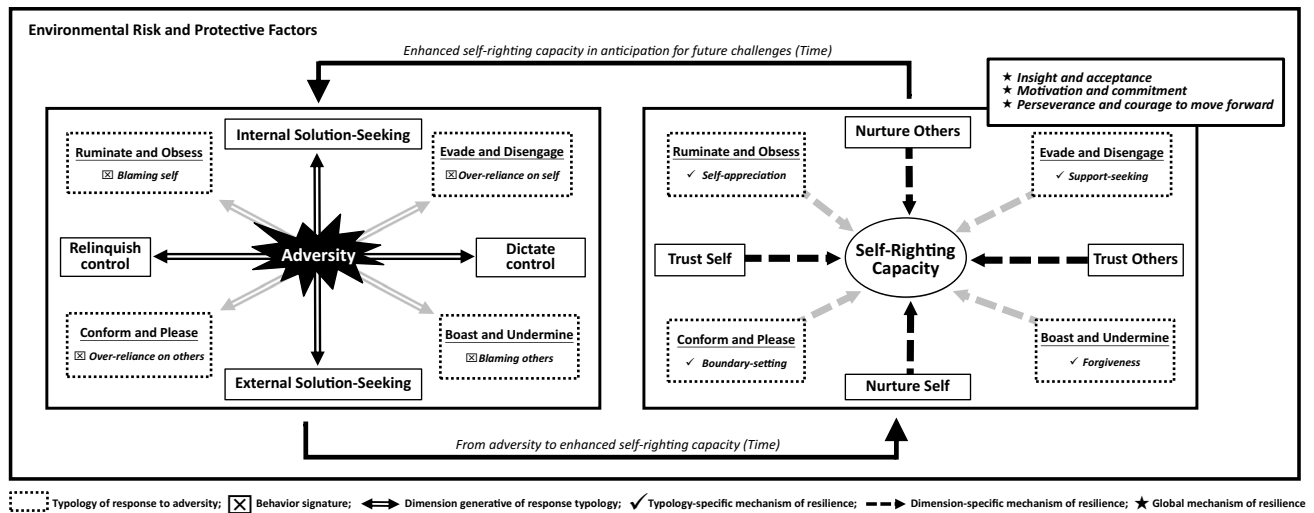


Fig. 1 Youth Resilience Process Model (Y-RPM)

to establish their self-worth. In both instances, the goal is to avoid rejection and humiliation.

Emergence of Resilience—The “Real”

Following the findings on the initial response patterns and the dimensions generative of these response typologies, two sets of response-specific mechanisms (i.e., typology-specific and dimension-specific mechanisms) were theorized to counter the initial response to adversity and produce unique trajectories of the resilience process to demonstrate positive adjustment. Further, we proposed three global mechanisms, which were considered universally salient drivers of the resilience process for both current and future adversities regardless of the response typology or the underlying factors generative of those responses. Upon successfully identifying, negotiating, and harnessing the assets and resources to mobilize both specific and global mechanisms necessary to counter the initial response to adversity, “self-righting capacity” is strengthened and resilience emerges.

Typology-Specific Mechanisms of Resilience Part of the resilience process is theorized to manifest through typology-specific mechanisms that counter the behavior signature of each response pattern. For those who *boast and undermine*, forgiveness appeared crucial to moving forward. Finding closure through repairing past relationships or, at a minimum, expressing forgiveness and “moving on” supported healthy adaptation. This also includes accepting responsibility for one’s feelings and reactions following the adversity, and the role that they played in perpetuating negative emotions and damaging relationships. For those who *ruminate and obsess*, developing a mindset of self-appreciation was especially important. This is achieved through identifying

positive aspects in themselves and in their life stories, such as acknowledging their strengths or attributing success and accomplishments to their own ability or hard work. Enhancing an overall sense of gratitude and praising oneself for overcoming past challenges also appeared to mitigate tendencies to blame oneself in future adversities. For those who *evade and disengage*, seeking support from others was a key factor in their resilience process. Expressions of healthy support-seeking requires relaxing rigid boundaries set between self versus others. This includes being able to recognize one’s needs and seeking out appropriate sources of assistance, actively reach out to share and connect with others, and take constructive advice with an open mind. Last, boundary setting was important for those who *conform and please*. This includes finding safe and stable companionship and developing meaningful connections that are based on trust, empathy, and genuine support.

Dimension-Specific Mechanisms of Resilience Another set of response-specific mechanisms (i.e., trust and nurturance) is proposed to counter the two dimensions generative of the four initial response typologies. Specifically, establishing trust in self or others countered responses marked by relinquishing or dictating control, respectively. Trusting oneself includes identifying one’s goals, strengths, and motivations; taking charge of one’s actions and wellbeing; and believing that one deserves kindness and happiness, all of which supports regaining a meaningful sense of control over how one perceives themselves and their future. Conversely, trusting others allows one to forego a need for absolute control and broadly includes placing more confidence in other people, situations, and the future. This entails seeing the good in people, believing that things will be okay, and tolerating ambiguity and letting go of ideals.

Another dimension-specific mechanism relates to nurturing self or others to counter responses marked by external versus internal solution-seeking. For responses based on external solution-seeking, nurturing oneself supports regaining a balanced sense of self-worth through a focus on understanding and caring for oneself; learning about what one needs and wants; and disregarding others' actions and expectations. For responses marked by internal solution-seeking, nurturing others redirects focus from self to others through rebuilding connections with people and the surrounding environment. Nurturing others includes helping others in need; empathizing and being considerate of others; and preventing others from experiencing adversity.

Global Mechanisms of Resilience We identified three global mechanisms in the present study context that are universally salient in ushering forward the resilience process regardless of individuals' initial response to adversities. First, *insight and acceptance* require individuals to reflect on their negative experiences so they become more in tune and comfortable with who they are, how they respond to challenges, and why they think, feel, and behave the way they do. This is often conducted in the form of healthy reminiscence, which allows individuals to figure out who oneself is, assign meaning to their adversity, and accept both positive and negative aspects of their experiences as part of one's life story.

Second, we observed that resilience requires *motivation and commitment*, which includes seeking out sources of motivation and a sense of direction for the future despite setbacks and challenges. Some of our participants described finding motivation as a "turning point" in how they approached the adversity and their outlook for the future. It is also at this point that they set meaningful goals, and actively try to identify, negotiate, and seek out resources to help them move forward and "do better."

Last, the journey to navigate and attain resources to improve wellbeing can be difficult. Thus, *perseverance and courage to move forward* are needed to sustain the momentum in ushering forward the resilience process. This is often exemplified by an unwavering belief that one can overcome, the courage to step out of their comfort zone and advocate for themselves, and planning for the future.

Self-righting Capacity Self-righting capacity is strengthened when individuals recognize the destabilizing impact of an adversity, accurately identify their initial response to the event, and activate the appropriate mechanisms to overcome that initial response. In this process, individuals become more aware of their personal propensities, strengths, and needs, and the resources available in their surrounding environment. Self-righting capacity is

continually challenged and transformed with each successive stressor and represents an accumulation of universally salient factors that support resilience (e.g., insight, motivation, perseverance), as well as specific internal assets and external resources to regain stability after a stressful event. Internal assets are positive individual factors, including self-awareness, self-efficacy, coping skills, and the overall capacity to self-regulate and manage social relationships. External resources include positive environmental factors that support positive coping, including support from family, peers, organizations, and the wider community, but the efficacy of these resources is dependent upon their availability and perceived utility. Together, assets and resources support building and balancing trust and nurturance towards self and others. Ultimately, an enhanced self-righting capacity (indicative of resilience) is carried forward, where individuals become more prepared, confident, and motivated to overcome future challenges.

Youth Resilience Process Model: An Overview

We present the Youth Resilience Process Model (Y-RPM) to consolidate findings and theorizations from this study (see Fig. 1). In this model, the resilience process begins when an adversity triggers an initial response for immediate self-preservation. This internal process continues when individuals recognize their response and, subsequently, accurately identifies and activates appropriate mechanisms necessary to extricate oneself from the response pattern. If successful, self-righting capacity is enhanced and individuals become better prepared for future challenges.

We theorize that the capacity to exhibit a resilient response is based on, and enhanced through, one's ability to successfully "cycle through" this process. Contrarily, the resilience process is halted when one remains stagnant. That is, an initial response to adversity pushes one into a highly adaptive and protective state, but remaining in this heightened response state becomes maladaptive and precludes growth and healthy development over time. Further, as different stressors require individuals to respond and adapt in different ways, they present as opportunities to challenge, develop, and enhance individuals' self-righting capacity. Thus, the resilience process continues and strengthens over the course of development as individuals exhibit different response patterns in the face of different challenges, successfully cycle through the process, and accumulate a variety of assets and resources to sustain wellbeing.

Lastly, we note that these internal processes and mechanisms operate within the wider context of the risk and protective factors in the surrounding environment. These environmental factors can be conducive to (or preclude) cycling through the process successfully, and underlie individual, situational, cultural, and temporal variations in the tendency

of mechanisms to usher forward the resilience process in the expected direction.

Discussion

The present investigation aimed to integrate and build on existing theories and concepts to explain the mechanisms and different pathways of the resilience process for young adults exposed to early life adversities. From the multisystem perspective, resilience is broadly defined as the *capacity of a complex dynamic system to respond to significant challenges or threats in ways that preserve or enhance the life, healthy function, and future development of that system* (Masten et al., 2023). This study builds on this existing understanding by concretizing potential variations of perturbations in normal functioning that invariably arises when the system is challenged (Bonanno, 2004), which may be salient to explaining the different pathways and factors that lead to different but equally viable expressions of resilience in the system as a whole (Ungar et al., 2013).

Four typologies of initial responses to adversities were uncovered and conceptualized as highly adaptive states exercised for the purpose of immediate self-preservation following an adversity. These typologies largely correspond with physiological responses to threat and trauma supported within the evolutionary framework—*fight, flight, freeze, and fawn* (Scaer, 2001)—and further describe how these threat responses manifest in young people exposed to adversity (i.e., behavior signature). Further, the behavior signatures of these initial responses correspond with symptoms of disturbances in self-organization (i.e., affective dysregulation, negative self-concept, and disturbances in relationships) that typically arise following trauma exposure, particularly those that are chronic and occurring in childhood (Shevlin et al., 2018), but only indicate complex presentations of a trauma response if sustained over time. Consistent with the literature (Walker, 2013), hybrid expressions of these initial responses were also observed. More research is needed to provide evidence for the conceptual validity of these initial response typologies and how different responses and the magnitude and duration of such response associate with developmental outcomes. Indeed, some research has called for more focus on understanding within-person variance and behavioral consistency across stressors as a measure of resilience (Pangallo et al., 2015). The two dimensions generative of these response patterns are also presented as testable hypotheses on the individual and contextual factors under which different initial responses may emerge.

We propose the Youth Resilience Process Model (Y-RPM) as a middle-range critical realist explanation (Pawson, 2000) of the resilience process in young people

exposed to adversities in early life. Corresponding to the wider literature on human development, Y-RPM mirrors the process of adaptation to transition, which occurs *if an event or non-event results in a change in assumptions about oneself and the world and thus requires a corresponding change in one's behavior and relationships* (Schlossberg, 1981). Specific to youths, Y-RPM corroborates existing understandings of youth resilience as a process of regaining stability through self-righting (Leung et al., 2022); identifying and securing assets and resources that sustain well-being (Ungar, 2008); and is continually transformed and strengthened through the iterative process of experimentation, learning, mastery motivation, and meaning-making (Liebenberg, 2020; Masten, 2014; Rutter, 2012). Y-RPM also conceptualizes youth resilience as a multi-directional movement process based on interactions between individual and ecological systems, which moves in a cyclical nature where successful movement towards resilience (as opposed to friction, stagnation, or merely “bouncing back”) allows for transformation, growth, and stability to occur (Clark, 2020, 2021). In addition to the mechanisms that support resilience at the individual level, the model also highlights global mechanisms (e.g., insight, self-awareness, internal coherence, perseverance, and orientation towards a life purpose) that are universally salient in fostering resilience (Crane et al., 2018; Sisto et al., 2019), and captures the core constructs and themes that are currently measured across resilience scales (i.e., control, resourcefulness, growth, and involvement) in different contexts (Wadi et al., 2020).

From a transdisciplinary perspective (Ungar, 2018), Y-RPM aligns with the core principles of systemic resilience and the five underlying processes for resilience to manifest, namely, resistance (initial response to adversity), adaptation (identifying and activating response-specific and global mechanisms), recovery (overcoming initial response), transformation (enhanced self-right capacity), and persistence (sustained wellbeing). Building on the extant literature, Y-RPM also describes uniformities and proposes hypotheses to explain how resilience (i.e., the outcome) begins as a process and manifests through different pathways (i.e., the mechanisms), while acknowledging irregularities in such processes and outcomes can arise from the risk and protective factors in the immediate surrounding environment (i.e., social structures of the context).

An important contribution of this study is that it provides organization and structure to discern the mechanisms that underlie unique pathways towards resilience. In fact, the typology- and dimension-specific mechanisms of resilience presented in our findings were not new. These mechanisms, which broadly covers cognitive, emotion, and relational regulatory skills, are developmentally salient and have been routinely targeted in youth resilience promotive interventions (Greenberg, 2006; Prince-Embury &

Saklofske, 2014). However, recent systematic reviews of such interventions showed their overall effect was small (Ang et al., 2022; Liu et al., 2020). Although there is wide consensus on the common elements that support resilience at the population level (Masten et al., 2021), resilience likely manifests through a more specific combination of such mechanisms and their interactions with the wider social environment at the individual level (Ungar et al., 2023). This is underscored in Y-RPM, which shows that the initial response triggered by an adversity and the ways to cope with and find resolution from such response are non-linear and context-dependent (Ungar et al., 2013). Correspondingly, the cultural and contextual factors that support or hinder the process of resilience are also unique and specific to individuals' circumstances and needs.

For example, Chinese youths who *conform and please* likely adopted this response based on their experiences growing up in a culture that values collectivism, obedience, and preserving harmony (Ho et al., 2021); thus, it can also be challenging for them to negotiate and enforce healthy interpersonal boundaries in this cultural context. In fact, promoting their active resistance to convention, which was found to be a culturally valid predictor of resilience among Black youths (Ungar, 2008), may inadvertently result in poorer outcomes as these expressions can be viewed as combative and disruptive in this social context. This demonstrates how social structures can interact with causal mechanisms generative of resilience at both individual and contextual levels and in positive or negative ways. Therefore, not using the right tools in the right situation and at the right time (despite their abundance) could result in friction, stagnation, or exacerbation of the initial response, which may explain why standardized resilience interventions that offer skills and resources without equipping individuals with the insight and acumen to select the right tools in contextually meaningful ways have produced limited effects. In this regard, future research can use Y-RPM as a roadmap to empirically examine whether and how specific and global mechanisms support resilience, for whom, and under what conditions.

Several suggestions on the broader application of Y-RPM are offered. At the universal level, socializing youths to Y-RPM is a proactive and preventative approach to promote self-discovery, support social and emotional development, and prepare youths to make more informed choices about their needs to overcome future challenges. These activities can be incorporated into psychoeducation programs in schools and provide a strength-based approach to initiate conversations about mental wellbeing between youths, parents, and teachers. Further, screening tools can be developed to help youths identify their general propensity towards a response typology when facing stressors, or the degree to which they adopt a response

typology in the event of significant distress. This insight can guide and motivate younger people towards seeking appropriate resources and strategies to overcome their initial responses. Y-RPM can also be integrated into community resilience initiatives during need assessments, and inform ways to maximize the use of capital support to augment individual, relational, and contextual resources based on the needs of youths and their community (Liebenberg & Scherman, 2021).

For youths who require more intensive support after experiencing trauma and adversity, Y-RPM can be applied to identify potential pathways to support positive adaptation and tailor modularize resilience-promotive interventions, which can be offered as a stand-alone intervention or alongside other clinical treatments. Indeed, a modular approach to psychotherapeutic interventions is becoming more common as this approach, by design, targets the most pressing needs and concerns of the client, and is considered more flexible, scalable, and adaptable compared with standardized treatment modalities (Murray et al., 2014; Weisz et al., 2012). Of note, the current standard treatment of complex posttraumatic stress symptoms typically associated with childhood trauma (i.e., disturbances in self-organization) also employs a modular sequential treatment approach (Karatzias & Cloitre, 2019). To our knowledge, there are two resilience-training programs that adopted a modular approach (Bak et al., 2015; Wasil et al., 2021), but none was designed to target needs at the individual level.

Limitations

The limitations of this study should be considered. First, the findings and theorizations presented were based on interviews with a convenience sample of young adults from Hong Kong. Despite our attempt to attain variability in age, gender, self-reported resilience, and types of childhood adversities, this was nonetheless a geographically and culturally homogenous group. Further, these young adults were pursuing higher education despite their childhood hardships, which suggests that they may be inherently, or at least academically, more resilient. Therefore, the utility and application of our findings in youths outside this context requires validation. Second, Y-RPM was developed through a critical realist lens and presented as conceptual model based on the integration of observed evidence and theoretical knowledge. Quantitative investigations are needed to test the model's efficacy by empirically verifying the typologies of initial responses to adversities and examining the causal effect of different mechanisms underlying different resilience pathways and trajectories across cultures. Last, our analysis focused on individuals' internal processes and mechanisms of

resilience. We acknowledge that resilience is shaped by complex reciprocal interactions and coactions between multiple system levels (Masten et al., 2021), some of which were not included in this investigation (e.g., genetic, neurobiological, and environmental factors).

Conclusions

We proposed Y-RPM as a novel model that describes four unique typologies of initial response to adversities, their respective behavior signatures, and the specific and global mechanisms that support resilience following an adversity in young people. Our findings advance theoretical and methodological discussions by systematically reducing the heterogeneity of observable behaviors to conceptually meaningful patterns, and connecting them with unobservable underlying mechanisms that necessitate the emergence of resilience using a critical realist approach.

The implications and future direction of this work are threefold. First, our findings call for further investigations into how the resilience process actually begins and, subsequently, the distinct pathways that foster resilience based on those initial responses. This includes examining whether and how Y-RPM can be applied across different contexts, cultures, and conditions. Second, Y-RPM can be used to facilitate understanding how response-specific and global mechanisms of resilience can be nurtured to strengthened resilience for youths exposed to trauma and adversity. More research is also needed to clarify which mechanisms works for whom and under what context based on the risks and protective factors present in the surrounding environment and across cultures. Lastly, Y-RPM can be used to inform the design of broad-based, low-intensity resilience promotive interventions for all youths. Such interventions may include socializing youths to the model and equipping them with a variety of foundational skills to successfully cycle through the resilience process. Y-RPM may also be applied in the clinical settings to tailor person-centered resilience-promotive interventions as adjunct or maintenance therapy for youths experiencing significant distress after trauma exposure.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s42844-024-00154-z>.

Funding Open access funding provided by The Hong Kong Polytechnic University. This work was supported by The Hong Kong Polytechnic University Internal Start-Up Fund (Grant No. 1-ZE7A).

Data Availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Conflict of Interest The authors declare no competing interests.

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