J. Indian Assoc. Child Adolesc. Ment. Health 2019; 15(1):1-12

Editorial

Resilience in childhood psychopathology: The changing paradigm

Naresh Nebhinani, Shreyance Jain

Address for correspondence: Department of Psychiatry, All India Institute of Medical Sciences, Jodhpur, Rajasthan. **Email:** drnaresh_pgi@yahoo.com

---

Human beings have wide range of ability to adapt to the adverse life situations. Some individuals, despite being faced with the most pernicious of adversities, manage to avoid collapse and maintain healthy adjustment. Resilience, from the Latin *resilire* (to recoil or leap back), is a construct related to positive adaptation in the context of stress or adversity. In the physical sciences, resilience refers to the capacity to withstand strain without breaking, or to recover to original form, like a spring or rubber band. In human science it refers to the positive adaptation or the ability to maintain or regain mental health, despite experiencing adversity [1]. Resilience is an inference based construct on report of better handling and outcome on experiencing a comparable level of adversity in some individuals compared to others. Those negative or adverse experiences may have strengthening or "steeling" effect in response to forthcoming hardships [2]. Evidently, whether one understands resilience as a developmental outcome, set of competencies, or coping strategies, there is still much overlap between these attributes.

Definition of resilience

It is individuals' response to the given stress or adversities [3] and their ability to bounce back from hardship and trauma [4]. As per the comprehensive definition by Windle, it is the process of negotiating, managing and adapting to significant sources of stress or trauma, in which the

assets and resources within the individual, their life and environment facilitate this capacity for adaptation and 'bouncing back' in the face of adversity [5].

Resilience in context to childhood psychopathology

Resilience was once considered as a special characteristic trait in children but gradually the concept has shifted to a more dynamic process of adaptation. The construct of resilience in context of childhood and adolescent age group has undergone a major shift from mere absence of psychopathology to a positive focus on competence and adaptive behaviour [6,7]. Resilience theory identifies three fundamental building blocks of resilience: secure base, good self-esteem and competence [8].

Table-1: Protective factors and positive adaptations for childhood psychopathology

Protective factors
Within Individual ▪ Low emotionality, engaging temperament (affectionate, cuddly) ▪ Problem-solving skills, planning, executive function, communication skills ▪ Self-regulation skills, emotion regulation ▪ High social skills and self esteem ▪ Self-efficacy, positive view of the self or identity ▪ Hope, faith, optimism, positive attitude ▪ Regular routines and rituals ▪ Strong moral beliefs and belief life has meaning ▪ Good school performance and above average intelligence ▪ Adequate material resources ▪ Development of personal identity ▪ Experience of power, control and social integrity
Family & Community ▪ Caring family, sensitive caregiving (nurturing family members) ▪ Close relationships, emotional security, belonging (family cohesion) ▪ Skilled parenting (skilled family management) ▪ Good emotional health of parents ▪ Strong attachment to family ▪ Pro-social behavior in family, school, and community ▪ Connections with well-functioning communities

In context of childhood psychopathology resilience is considered as a super ordinate construct of exposure to risk factors (biological- prenatal and perinatal insults, infections; psychosocial- poverty, maltreatment, trauma, loss of family member, poor relationships etc), protective factors and positive adaptations in children as detailed in table-1 [9-15].

Factors affecting resilience in children

Temperament

Temperament is found to have a major role in shaping resilience development. As easy-going temperament has positive effect and affective temperament has negative impact on resilience in youths [16,17]. Longitudinal study by Werner and Smith found that children who as infants were smiley, cuddly, and sociable were most likely to overcome the adversities associated with poverty [18].

Parenting

Numerous studies have highlighted the role of parenting on children's resilience. Secure attachment with a consistent caregiver is one of the most robust predictors of resilient functioning. Parenting quality may perhaps be of top importance in protecting children's development against the effects of adversity [19]. Greater resilience is seen among children with emotional, mental, or behavioral conditions and multiple adverse childhood experiences when their parents report less parenting stress and more engagement in their child's lives [20].

Cultural factors

Cultural influences, such as ethnic pride and biculturalism, are potential sources of protection, whereas clashes between two cultural value systems, are potential sources of vulnerability [21].

Stress

Following interrelated variables may impart greater resilience to an adolescent facing a stressful environment: early life programming of the hypothalamic pituitary-adrenal (HPA) axis, stress inoculation and genetic predisposition [22]. Association of level of early life stress with resilience is represented as an inverted-U function, as too little or too much early life stress can lead to later stress-induced dysfunction, while intermediate, moderate levels of stress may immunize one against later adversity [23,24].

Epigenetic factors

Psychiatric disorders, temperament, and measures of the family environment have genetic influence. Specific genes are involved in predicting resilient functioning by modifying the effect of environmental risks on behavioral outcomes. Genes related to the HPA axis, serotonergic systems owed weak to moderate associations with resilient phenotypes [25,26].

Genetic studies provided many pointers to the likely occurrence of gene with environment (G×E) interaction with respect to the outcomes of depression and antisocial behavior [3,27]. Functional polymorphism in the serotonin transporter (5-HTTLPR) gene significantly showed the association between stressful life events and depression [28]. Polymorphism in the gene encoding the monoamine oxidase A (MAOA) enzyme moderated the impact of childhood maltreatment on the development of antisocial behavior [11]. Polymorphism in the gene encoding catechol-O-methyltransferase (COMT) moderated the association between early cannabis use and psychosis [29].

Role of family and schools in building resilience

In building resilience focus should be on the values of planning, self-reflection, self efficacy, successful coping with stress/challenge and active personal agency. These factors can be learnt

by experiential teaching both at home and at schools, as both the places play vital role in developing resilience in children. The purpose should be the exposure to manageable risks, challenges, and responsibilities rather than being protected from them and cope effectively [30].

At home good warm family environment, lesser family conflicts and effective parenting have shown beneficial results in building resilience. Schools are conducive in the development of positive mental health, and developing resilience in young people as they provide strong medium for observational learning as well as access to children and adolescents at critical developmental stages. At schools focus should be on the values of responsibility, autonomy and having the opportunity of learning from mistakes [19,31].

It is suggested that the most effective intervention programmes involve 'multi-faceted paradigms' that attempt to reduce modifiable risk, strengthen meaningful assets, and recruit core developmental processes within the child, family and the broader community.

Measuring resilience

Measuring resilience is as challenging as varied opinions on definition and the difficulties in identifying its characteristics. Resilience findings, both quantitative and qualitative, emphasize the importance of mental phenomena—ideas, attributes, self-reflection, and planning. Adequate clinical assessment should assess these with an interest in those that might have the potential for overcoming adversity. The Brief Resilience Scale (BRS) seems to be a reliable means of measuring resilience, such as the ability to recovery from stress, while suggesting ways of coping with stressors [32]. Other tools are Youth Resiliency: Assessing Developmental Strengths (YR:ADS) (for age 12-17 years) [33], Resiliency Attitudes and Skills Profile (for age 12-19 years) [34], Resilience Scale for Adolescents (READ) (for age 13-15 years) [35]. Although a

number of scales have been developed for measuring resilience, they are not widely adopted and none is preferable over other [36].

Resilience-Focused Interventions

Resilience building interventions are based on reducing or mitigating risk; boosting assets to promotive factors for child health and development; and nurturing or restoring the adaptive systems that generate capacity for resilience over the time [37,38]. Resilience focused interventions are commonly school based and adopt universal frameworks, targeting whole populations or groups (e.g. curriculum-based lessons, capacity-building strategies). Programs have been designed to improve/enhance resilience by strengthening protective factors thereby positively influencing mental health in children and adolescents. A meta-analysis has also shown benefit of these resilience focused interventions [39]. Werner-Seidler et al. implemented interventions targeting both levels of prevention in the school setting, and suggested a stepped-care approach whereby universal interventions are first implemented, with targeted interventions later to students with increased risk of mental health problems [40].

The comprehensive systematic review found the effectiveness of school-based resilience-focused interventions varies by mental health problem outcome, age group, and length of follow-up [41]. Resilience-focused interventions were overall found to be effective in reducing depressive and anxiety symptoms, internalizing problems, externalizing problems, and general psychological distress.

Technological advances with app-based programs, devices, social media and virtual reality have provided several innovative strategies for building skills and resilience, monitoring their competence and connecting with social support groups and professional networks [15] Advancement in molecular genetics and neuroimaging have made it feasible to conduct research

on pathways of building resilience from a multilevel perspective of studying personality, neuroendocrine, and genetic contributors to resilient brain [42].

Together with parents and teachers, health professionals involved in child care can play a central role in nurturing the healthy development and building resilience across the life course [15]. An interprofessional framework is needed to mitigate risk and promote resilience in children along with effective preparation, practice, collaboration and coordination across systems, with strategic consideration of appropriate timely interventions [15].

Population-based interventions include social policies and support for parents of infants, early childhood intervention programs and school-based interventions [43]. Particularly relevant is the scaling up and evaluation of effective participatory community-based programs to support early child development [44]. A whole community approach is one in which the critical domains of resilience, family, school environment and community are integrated in the mission of fostering resilience through collaborative partnership and engagement [45].

Research gap and priority

Resilience research in mental health conditions lacks unified methodology and poor concept definition. Major gap in the field is the lack of coordination between human and animal studies. We are just beginning to identify resilience factors and still more neurobiological mechanisms conferring resilience are being identified. There is an urgent need for more systematic evaluations of programs where teaching children problem-solving skills, enhancing their communication skills and self esteem, and providing positive role models for them that enables vulnerable children to become competent, confident, and caring individuals, despite the odds. Attention also needs to be paid to the child's ongoing relationships; successful coping

encompassing the social, as well as the psychological, dimension with a cross-cultural perspective [46].

Long-term studies should be conducted to understand the process of developing resilience with complex interplay of adversities and strengths and for mapping the linkages between resilience as a psychosocial phenomenon as well as biological process [47]. There is vital need to promote the "effective tools" for developing resilience (e.g., positive attitude, active coping, effective emotion regulation, social integration etc.) at the level of public education and community intervention programs.

To conclude, resilience is a dynamic developmental process encompassing the attainment of positive adaptation within the context of stress or adversity. Studies on resilience have unleashed a fundamentally novel way of understanding an individual's responses to adverse life events. Such findings may valuably inform future school-based interventions targeting child and adolescent mental health problems.

Reference

1. Masten AS, Best KM, Garmezy N. Resilience and development: Contributions from the study of children who overcome adversity. Development and Psychopathology 1990, 2:425-444.
2. Rutter M. Resilience as a dynamic concept. Development and Psychopathology 2012, 24:335-344.
3. Rutter M. Genetic Influences on Risk and Protection: Implications for Understanding Resilience. In: Luthar SS, editor. Resilience and Vulnerability: Cambridge University Press, p. 489–509
4. Southwick SM, Charney DS. The science of resilience: implications for the prevention and treatment of depression. Science 2012, 338:79–82.
5. Windle G. What is resilience? A review and concept analysis. Rev Clin Gerontol 2011, 21:152–69.

6. Looper K, Grizenko N. Risk and Protective Factors Scale: Reliability and Validity in Preadolescents. Can J Psychiatry 1999, 44:138–43.
7. Luthar SS, Zigler E. Vulnerability and competence: a review of research on resilience in childhood. Am J Orthopsychiatry 1991, 61:6–22.
8. Shastri PC. Resilience: Building immunity in psychiatry. Indian J Psychiatry 2013, 55:224–34.
9. Kim-Cohen J. Resilience and Developmental Psychopathology. Child Adolesc Psychiatr Clin N Am. 2007, 16:271–83.
10. Kaufman J, Yang B-Z, Douglas-Palumberi H, Houshyar S, Lipschitz D, Krystal JH, et al. Social supports and serotonin transporter gene moderate depression in maltreated children. Proc Natl Acad Sci 2004, 101:17316–21.
11. Jaffee SR, Caspi A, Moffitt TE, Taylor A. Physical maltreatment victim to antisocial child: evidence of an environmentally mediated process. J Abnorm Psychol 2004, 113:44–55.
12. Bond L, Toumbourou JW, Thomas L, Catalano RF, Patton G. Individual, family, school, and community risk and protective factors for depressive symptoms in adolescents: a comparison of risk profiles for substance use and depressive symptoms. Prev Sci 2005, 6:73–88.
13. Hjemdal O, Aune T, Reinfjell T, Stiles TC, Friborg O. Resilience as a predictor of depressive symptoms: a correlational study with young adolescents. Clin Child Psychol Psychiatry 2007, 12:91–104.
14. Ungar M, Brown M. Distinguishing differences in pathways to resilience among Canadian youth. Canadian Journal of Community Mental Health 2008, 27:1-13.
15. Masten AS, Barnes AJ. Resilience in Children: Developmental Perspectives. Children 2018, 5:98.
16. Cowen EL, Wyman PA, Work WC, Parker GR. The Rochester Child Resilience Project: Overview and summary of first year findings. Dev Psychopathol 1990, 2:193–212.
17. Kesebir S, Ünübol B, Tatlıdil Yaylacı E, Gündoğar D, Ünübol H. Impact of childhood trauma and affective temperament on resilience in bipolar disorder. Int J bipolar Disord 2015, 3:3.
18. Werner EE, Smith RS. Overcoming the odds : high risk children from birth to adulthood.

Cornell University Press, 1992. pp 280.

19. Ungar M. The Importance of Parents and Other Caregivers to the Resilience of High-risk Adolescents. Fam Process 2004, 43:23–41.
20. Bethell C, Gombojav N, Solloway M, Wissow L. Adverse Childhood Experiences, Resilience and Mindfulness-Based Approaches: Common Denominator Issues for Children with Emotional, Mental, or Behavioral Problems. Child Adolesc Psychiatr Clin N Am 2016, 25:139–56.
21. Szalacha LA, Erkut S, Garcia Coll C et al. Perceived discrimination and resilience. In: Luthar SS, editor. Resilience and vulnerability: adaptation in the context of childhood adversities. Cambridge (MA): Cambridge University Press, 2003. p. 414–35.
22. Romeo RD. Perspectives on stress resilience and adolescent neurobehavioral function. Neurobiol Stress 2015, 1:128–33.
23. Lyons DM, Parker KJ, Schatzberg AF. Animal models of early life stress: implications for understanding resilience. Dev Psychobiol 2010, 52:616–24.
24. Bock J, Rether K, Gröger N, Xie L, Braun K. Perinatal programming of emotional brain circuits: an integrative view from systems to molecules. Front Neurosci 2014, 8:11.
25. Plomin R, Reiss D, Hetherington EM, Howe GW. Nature and nurture: Genetic contributions to measures of the family environment. Dev Psychol 1994, 30:32–43.
26. Russo SJ, Murrough JW, Han M-H, Charney DS, Nestler EJ. Neurobiology of resilience. Nat Neurosci 2012, 15:1475–84.
27. Rutter M, Silberg J. Gene-environment interplay in relation to emotional and behavioral disturbance. Annu Rev Psychol 2002, 53:463–90.
28. Caspi A, Sugden K, Moffitt TE, Taylor A, Craig IW, Harrington H, et al. Influence of Life Stress on Depression: Moderation by a Polymorphism in the 5-HTT Gene. Science 2003, 301:386–9.
29. Caspi A, Moffitt TE, Cannon M, McClay J, Murray R, Harrington H, et al. Moderation of the effect of adolescent-onset cannabis use on adult psychosis by a functional polymorphism in the catechol-O-methyltransferase gene: longitudinal evidence of a gene X environment interaction. Biol Psychiatry 2005, 57:1117–27.
30. Bandura A. Self-efficacy in changing societies. New York, NY, US: Cambridge University Press, 1995.

31. Rutter M, Maughan B. School effectiveness findings 1979-2002. J Sch Psychol 2002, 40:451–75.
32. Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P, Bernard J. The brief resilience scale: Assessing the ability to bounce back. Int J Behav Med 2008, 15(3):194–200.
33. Donnon T, Hammond W. A psychometric assessment of the self-reported Youth Resiliency: Assessing Developmental Strengths questionnaire. Psychol Rep 2007, 100:963–78.
34. Hurtes KP, Allen LR. Measuring resiliency in youth: The resiliency attitudes and skills profile. Ther Recreat J 2001, 35.
35. Hjemdal O, Friborg O, Stiles TC, Martinussen M, Rosenvinge JH. A New Scale for Adolescent Resilience: Grasping the Central Protective Resources Behind Healthy Development. Meas Eval Couns Dev 2006, 39:84–96.
36. Connor KM, Davidson JRT. Development of a new Resilience scale: The Connor-Davidson Resilience scale (CD-RISC). Depress Anxiety 2003, 18:76–82.
37. Masten AS. Resilience in children threatened by extreme adversity: Frameworks for research, practice, and translational synergy. Dev. Psychopathol. 2011, 23, 493–506.
38. Masten AS. Global perspectives on resilience in children and youth. Child Dev 2014, 85:6-20.
39. Bastounis A, Callaghan P, Banerjee A, Michail M. The effectiveness of the Penn Resiliency Programme (PRP) and its adapted versions in reducing depression and anxiety and improving explanatory style: A systematic review and meta-analysis. J Adolesc 2016, 52:37-48.
40. Werner-Seidler A, Perry Y, Calear AL, Newby JM, Christensen H. School-based depression and anxiety prevention programs for young people: A systematic review and meta-analysis. Clin Psychol Rev 2017, 51:30–47.
41. Dray J, Bowman J, Campbell E, Freund M, Wolfenden L, Hodder RK, et al. Systematic Review of Universal Resilience-Focused Interventions Targeting Child and Adolescent Mental Health in the School Setting. J Am Acad Child Adolesc Psychiatry 2017, 56:813-24.
42. Cicchetti D. Resilience under conditions of extreme stress: a multilevel perspective. World Psychiatry 2010, 9:145-154

43. Herrman H, Jané-Llopis E. Mental health promotion in public health. Promot Educ 2005, Suppl 2:42–7
44. Engle PL, Black MM, Behrman JR, Cabral de Mello M, Gertler PJ, Kapiriri L, et al. Strategies to avoid the loss of developmental potential in more than 200 million children in the developing world. Lancet 2007, 369:229-42.
45. Khanlou N, Wray R. A Whole Community Approach toward Child and Youth Resilience Promotion: A Review of Resilience Literature. Int J Ment Health Addict 2014, 12:64-79.
46. Werner EE. Resilience in Development. Curr Dir Psychol Sci 1995, 4:81-4.
47. Ryff CD, Singer B. Flourishing under fire: Resilience as a prototype of challenged thriving. In Keyes CL, Haidt J (Eds.), Flourishing: Positive psychology and the life well-lived. Washington, DC, US: American Psychological Association, 2003. pp. 15-36

Naresh Nebhinani, Associate Professor, Shreyance Jain, Former Senior Resident, Department of Psychiatry, All India Institute of Medical Sciences, Jodhpur, Rajasthan.