

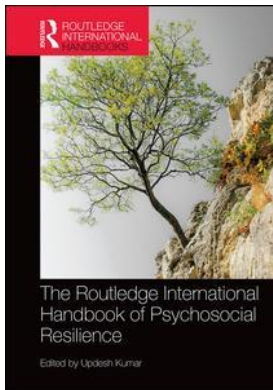
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Conceptual complexity of resilience

Synergy approach to measurement¹

Meena Hariharan and Suvashisa Rana

Resilience is a psychological resource that enhances the positivity in human life. Though ‘resilience’ is simple to understand, as a psychological construct, the intricacy lies in its conceptualization and operationalization. The academic debate on resilience was initiated about four and a half decades ago by psychologists like Anthony (1974) and Garmezy (1984). It started as simple research questions as to why and how a small proportion of a population exposed to severe adversity emerges successfully in life unaffected by adverse impacts. Thus, the phenomenon was very simple, referring to high achievement despite high adversity. The focus of research was the identification of the unique characteristics of this small percentage of the population that behaved in contrast to the probable consequences of adversity. The focus of research was typically on samples like children of schizophrenic parents (Garmezy, 1984); children of alcoholic parents (Chassin, Carle, Nissim-Sabat, & Kumpfer, 2004; Walker & Lee, 1998); institutionalized children (Cordovil, Crujo, Vilariça, & Caldeira Da Silva, 2011; van IJzendoorn et al., 2011); disadvantaged children (Dash & Nayak, 1998); and children with disability (Hariharan, Karimi, & Kishore, 2014), where risk is defined on statistical probability. Thus, the concept of resilience was one of the simplest to understand, where the subject of study was ‘Why did that small percentage of children whose parents were diagnosed with schizophrenia not show any symptoms?’, ‘Why did those few children reared in impoverished physical and psychosocial environment not fail in academic fields?’, and ‘Why did that minor population of children with disabilities not perish like their counterparts, but excel in life?’. In other words, the subject of research was the small group of deviants from the natural, antecedent consequence path of negativity. It is this simplicity and the outlandish nature of the construct that allured many researchers to work in the field. The construct has assumed different functionally equivalent terms like ‘stress-resistance’ (Masten & Garmezy, 1985), ‘invincible’ (Werner & Smith, 1982), and ‘golden lotus’ (Dash & Nayak, 1998). According to Losel, Bliesener, and Kofler (1989), ‘There is a multitude of constructs that are related to invulnerability, such as resilience, hardiness, adaptation, adjustment, mastery, plasticity, person-environment fit, or social buffering’.

According to Rutter (1990), resilience refers to the fact of maintaining adaptive functioning in spite of serious risk hazards. Later on he argued, ‘Resilience does not constitute an individual

trait or characteristic. . . . Resilience involves a range of processes that bring together quite diverse mechanisms' (Rutter, 1999). Resilience is also considered as the indication of a process that characterizes a complex social system at a moment in time (Fonagy, Steele, Steele, Higgitt, & Target, 1994). Describing as 'ordinary magic', Masten (2001) explains resilience as 'a class of phenomena characterized by good outcomes in spite of serious threats to adaptation or development'. Research findings posit that resilience is an emergent property of a hierarchically organized set of protective systems that cumulatively buffer the effects of adversity and can therefore rarely, if ever, be regarded as an intrinsic property of individuals (Roisman, Padrón, Sroufe, & Engeland, 2002). From research findings on children in institutions, Ungar (2005) observes that resilience is adequate provision of health resources necessary to achieve good outcomes in spite of serious threats to adaptation or development.

What can be termed as the initial phase of research in the field focused on marking characteristics of the individuals identified as resilient (Rutter, 1990; Werner & Smith, 1982). Among the Indian psychologists, Dash and Nayak (1998) have popularized the concept. They have, not only identified the characteristics of the resilient persons, but also traced their existence and identified characteristics from ancient Hindu scriptures. Werner and Smith (1982), in their longitudinal study running over several decades, identified the presence of a number of individual characteristics like autonomy for girls; care and nurture for boys; competence for both; and external factors such as family support, family organization, and type of family. Hariharan (1990) in her research identified certain individual characteristics such as prioritizing needs, readiness to meet challenges in resilience among socially disadvantaged and flexible coping style (Hariharan et al., 2014) in resilience among the physically challenged population. With the progress in research, several other characteristics were identified as unique to resilient children. Kobasa (1982) argued that 'hardiness', with its components of commitment, control, and challenge, is a distinct characteristic among the resilient. The literature featured many more characteristics, such as coherence (Antonovsky, 1984), ego strength, creative abilities, increased personal and physical attractiveness (Cohler, 1987), problem-solving skills, autonomy, optimism, sense of purpose, and future orientation (Bernard, 1997). Subsequent research added a few more characteristics of the resilient such as positive emotion (Tugade & Frederickson, 2004), positive affect (Zautra, Johnson, & Davis, 2005), self-efficacy (Gu & Day, 2007), self-esteem (Kidd & Shahar, 2008), and extraversion (Campbell-sills, Cohan, & Strein, 2006). Resilience is thus conceived as a constellation of individual characteristics.

Resilience: conceptual complexity

Every new impact from research in resilience added new insight to the concept, and every new insight triggered new questions. Thus, the simple concept of resilience progressively turned complex. Kaplan (1999) observes that variability in definition may be traced to four main sources: 1) the distinction between the relationship between resiliency and outcome, 2) the variation in outcomes among those definitions that equate resilience with outcomes, 3) the variation in the defining characteristics of resilience that influence outcome, and 4) the outcomes and their putative causes being defined in terms of risk factors that are themselves highly variable.

Analyzing the characteristics of the resilient, very pertinent research questions that evolved were whether these characteristics are traits and whether these children have predisposition. In fact, some studies came up with results in support of the predisposition hypothesis. For example research done on the study of monozygotic and dizygotic twins exposed to socio-economic deprivation found that evidence of resilience was high among monozygotic than dizygotic

twins (Kim-Cohen, Moffitt, Caspi, & Taylor, 2004). Resilience as a trait was construed as a constellation of characteristics in the individual. However, the researchers preferred to call these individual characteristics in the resilient person as 'protective factors'. Adding little complexity, researchers envisaged the protective factors, not just as individual characteristics, but also present externally at two levels – family and community (Garmezy, Masten, & Tellegen, 1984; Rutter, 1979). Thus, the protective factors were expanded to the psychosocial level. The presence of these protective factors were assumed to have a shielding effect on the individuals insulating them from the negative impact of adversities. This in fact explained how the positive characteristics function in those who are resilient. Researchers like Sameroff, Gutman, and Peck (2003) went a step further and argued that, while the protective factors are helpful in insulating one from the negative impact, certain positive experiences like success and achievements that have intrinsic value assume the role of promoting resilience. Thus, while the protective factors are construed as the buffer, the promoting factors may be identified as the driving force. Perhaps each positive experience reinforces and strengthens the motivation to achieve or excel further.

Is the presence or absence of protective factors the sufficient prerequisite of resilience? Unless these protective and promotive factors are functional, resilience is not created. Based on this logic, Rutter (1987) argued that resilience is a process. Other researchers also subsequently explained resilience as a process (Luthar, Cicchetti, & Becker, 2000; Masten, Best, & Garmezy, 1990). Whether resilience is a process, an outcome, or a trait has been the focus of debate among the researchers for a long time. Based on the way it was conceptualized, different researchers defined resilience in different ways. A number of researchers referred to resilience as a protective factor by defining it as 'behavioural tendencies' (Agaibi & Wilson, 2005), 'capacity of the individual to cope' (Lee & Cranford, 2008), or 'personal qualities' (Connor & Davidson, 2003). Explaining the role of protective factors, Rutter (1987) clarified that the protective factors function as modifiers and ameliorators of the individual's response to the adverse environment. Thus, resilience is not just a protective factor but a process involving factors that bring a productive response outcome. Rutter identified three such processes – building positive self-image, reducing the effect of risk factors, and breaking the negative cycle – which perhaps referred to the vicious circle of exposure to adversity and negative outcome in the form of failure, underperformance, and underachievement. The merit in this argument shifted the focus of research from identifying the factors to understanding the process that facilitates the individual to emerge through the adverse environment (Luthar et al., 2000). Emphasizing the need for understanding the process, Luthar et al. (2000) defined resilience as 'a dynamic process encompassing positive adaptation within the context of significant adversity'. Two factors demand special attention in this definition – 'significant adversity' and 'positive adaptation'.

Adversity in life may range from daily hassles like an unfriendly or unhygienic neighbourhood to potentially highly disruptive events such as the sudden demise of a loved one or a terror attack or losing an organ in an accident. Thus, adversity is a phenomenon that can be measured on two dimensions – the seriousness attributed through the frequency of its subjective experience and the duration of its experience. Thus, subjective perception, influenced by an array of factors, determines the seriousness. The second factor is the frequency with which one encounters such adversity. Traumatic experience such as childhood sexual abuse or humiliating experience of social discrimination may repeat themselves. What is the method by which the cumulative effect of adversity is taken into account? The other dimension is the duration of exposure to adversity. Studies on the impact of prolonged deprivation and short-term deprivation showed the potential devastating effects of duration of deprivation. Thus, when the degree

of adversity is determined by the frequency and duration, adversity needs to be referred by taking into account the frequency, severity, and duration. What is referred as 'significant adversity' has an element of subjectivity in terms of attribution – what is perceived – as a significant adversity by one may not be viewed so by another. For example as per the attribution theory, the sudden demise of a parent may be perceived as devastating and has a stable and global impact on one's life. On the other hand, another sibling living far away may perceive it as a serious loss impacting the specific personal dimension. Yet he may view it as unstable, from which one recovers over a period of time.

The phrase generally used in describing resilience is 'positive adaption'. The term connotes significant limitations with reference to performance or achievement. Adaption refers to the degree to which an individual adjusts to the environment. If the environment is adverse, then logically adapting to the environment is an attempt to accommodate oneself to the demands of the environment. Here the persons change themselves to suit the environment. However, resilience refers to a context where the person manipulates, explores, and exploits the adverse environment in order to emerge unscathed or with minimum adverse impact. Hence, it may not be very appropriate to describe a resilient person who 'adapts'. Rather the resilient is the one who performs and achieves in the face of significant adversity. As propounded by Rutter (2006), repeated exposure to adversity creates a resistance to further adversity, which helps the individual to insulate oneself from its negative impacts and attain high achievement levels.

Yet another question that needs to be addressed is with regard to the level of performance or achievement. Performance assessment places the individual at different levels of achievement. Performance below the average level is considered underachievement or failure, while assessment that finds the performance above the average level varies in degrees that range between 'above average' to 'excellent'. With reference to the performance and achievement, the question that is of crucial importance is what is the level of performance and achievement in the face of adversities that qualifies one to be resilient. Does average achievement despite adversities label one as resilient, or should one's achievement be significantly nearing excellence in order to be called resilient?

If we plot the adversities and achievement on the X-axis and Y-axis, respectively, and the level of achievement by the curve $R-R^1$, the resilient person can be found on the extreme right end of the curve represented by R^1 (see Figure 3.1).

Thus, resilient persons are positioned where adversity is high and achievement is high. The beginning of the process of resilience can be traced where $OY = OX$.

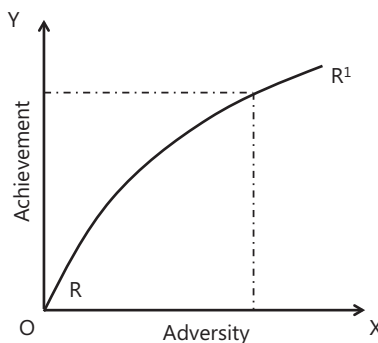


Figure 3.1 $R-R^1$ curve

Resilience: synergy approach to measurement

The process–product debate on resilience is converged on two essential prerequisites – the experience of adversity and achievement in the face of it. The interactive product of resilience is dynamic, varying in degree and level across situations – illness, trauma, crime, crisis, deprivation, and disadvantaged life conditions – and lifespan – childhood, adolescence, adulthood, and old age.

The availability of several psychological instruments to measure the construct of resilience is an indication of its complexity in operationalization. A critical review of the existing measures suggests that none of the measures is final in its version because of the dearth of relevant information about psychometric properties (Ahern, Kiehl, Sole, & Byers, 2006; Windle, Bennett, & Noyes, 2011). In psychological measurements, we use tests, scales, questionnaires, inventories, and checklists – each having its own advantages and disadvantages. In certain cases, we use paper-and-pencil tests whereas in other situations we depend on performance tests. In addition to these, we use projective tests to understand person’s inner self. In Windle’s (1999) view,

[A]dditional efforts need to be focused on the multi-variable measurement issues surrounding the construction of risk and protective factor indexes, and the associated trade-offs in using ‘clumped’ summated indexes versus alternative scoring methods.

(p. 174)

As resilience is a multi-dimensional construct and needs a multi-method approach, a battery of measures is the need of the hour in place of a single measure. Therefore, we postulate a synergy model to explain the basic principles of resilience in human life. We also propose a method to quantify resilience in more meaningful way by taking into consideration other significant constructs lying within it.

Synergy model of resilience

Our proposed ‘synergy model of resilience’ posits that resilience is a unique function of adversity, operating factors, and resistance across a time continuum that brings and sustains positive reflection in forms of achievement and flourishing in the person’s life. Combined in a unique fashion, adversity, operating factors, and resistance – three prerequisites of resilience – interact to generate and nurture resilience. This synergy is presented in Figure 3.2 and elaborated in detail in Figure 3.3.

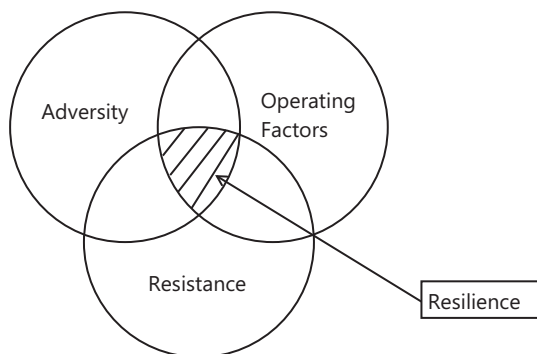


Figure 3.2 Synergy among adversity, operating factors, and resistance

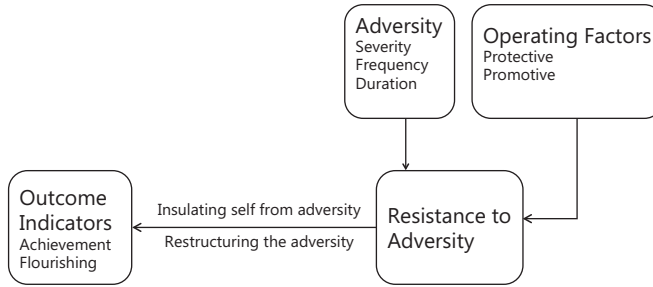


Figure 3.3 Path in synergy model of resilience

Adversity

The model (Figure 3.3) considers adversity not as a one-dimensional but rather as a multi-dimensional life condition. The adversity may be physical (e.g. disability), situational (e.g. deprivation), natural (e.g. tsunami), and parental (e.g. anti-social parents). The adversity may be congenital or accidental at any point of time after birth. There are three aspects of adversity – severity, frequency, and duration – that are to be taken into consideration while measuring resilience. How does one perceive this adversity, how often this adversity has impact on person's life, and how long the impact is felt are also the matter of high relevance in the context of resilience. Therefore, it is necessary to develop independent psychological instruments to measure these three aspects of adversity by following appropriate scaling techniques.

Operating factors

In the model, operating factors, which is intra-individual, refer to protective factors (inherent) and promotive factors (positive experiences). Like adversity, independent psychological instruments using appropriate scaling techniques are necessary to measure these two operating factors.

Resistance

We postulate that adversity and operating factors are not sufficient enough to generate and foster resilience unless there is resistance by the person. This resistance empowers the person for two actions – 1) restructuring the adverse environment and 2) insulating self from adversity. Independent psychological instruments are required to quantify these two actions of the person during adversity.

Outcome indicators

Because of the synergy among adversity, operating factors, and resistance, resilience is reflected in the form of high achievement in the face of high adversity, bringing transformation in the person's life. The major indicators of such positive growth are achievement and flourishing. Achievement and flourishing are to be measured by developing and using appropriate psychological instruments in the context of adversity, operating factors, and resistance.

Figure 3.2 depicts the presence of resilience where there is synergy between adversities, operating factors, and resistance. This indicates that any one of these factors in isolation cannot give

rise to resilience. For example the positive characteristics within the individual and in the environment that are construed as protective factors by themselves are not sufficient conditions to bring resilience to those who encounter adversities. The person has to identify and endorse these strengths within and also perceive a sense of control over adversities either by using the internal resources of positive characteristics or by drawing from the external resources such as positive social support or a combination of both. This drive from within translated into action helps in the emergence of resistance to adversity. The convergence of these three brings in resilience.

As presented in Figure 3.2, operating factors contribute positively towards building and functioning the resistance to adversity. In this process, the individual either insulates from adversity (passive resistance) or restructures adversity (through active coping) to suit one’s own needs towards the set goal. Either of these two options leads to high achievement and flourishing in life.

Resilience index: method of measurement

Basing on our proposed model, we suggest a method to quantify resilience in the form of the Resilience Index (RI), which determines the level of resilience of a person basing on a threshold. This method provides respective weight to each aspect of adversity, operating factors, and outcome indicators of resilience.

Step 1: Calculation of the Adversity Index (AI)

To calculate AI, we need to calculate the Adversity Severity Index (ASI), the Adversity Frequency Index (AFI), and the Adversity Duration Index (ADI). These primary indexes are to be calculated from the respective measures independently and are to be in percentages. For example

$$ASI = \frac{\text{Mean score of the participant}}{\text{Maximum score of the standard sample}} \times 100$$

The maximum score of the standard sample will be prescribed through the process of standardization by the researcher. Likewise, all other primary indexes are to be calculated depending on the obtained scores and the maximum scores of the measures concerned. After obtaining all these primary indexes, the AI is to be derived by using the following formula, where aw_1 , aw_2 , and aw_3 are respective weightage for the aspects of adversity.

$$AI = \frac{ASI \times aw_1 + AFI \times aw_2 + ADI \times aw_3}{aw_1 + aw_2 + aw_3}$$

Step 2: Calculation of the Operating Factors Index (OFI)

To calculate OFI, we need to calculate its primary indexes – the Protective Factor Index (PrI) and the Promotive Factor Index (PmI). These primary indexes are to be calculated from the respective measures independently and are to be in percentages by following the method mentioned under ASI, where ow_1 and ow_2 are respective weights for the two aspects of operating factors.

$$OFI = \frac{(PrI \times ow_1) + (PmI \times ow_2)}{ow_1 + ow_2}$$

Step 3: Calculation of the Resistance Index (RSI)

$$RSI = \frac{OFI}{AI} \times 100$$

Step 4: Calculation of the Outcome Indicator Index (OII)

To calculate OII, we need to calculate its primary indexes – the Achievement Index (AchI) and the Flourishing Index (FI). These primary indexes are to be calculated from the respective measures independently and are to be in percentages by following the method mentioned under ASI, where iw_1 and iw_2 are respective weights for the aspects of outcome indicators.

$$OII = \frac{(AchI \times iw_1) + (FI \times iw_2)}{iw_1 + iw_2}$$

Step 5: Calculation of the Resilience Index (RI)

$$RI = \frac{OII}{RSI} \times 100$$

The persons showing average resilience are expected to obtain $RI = 100$ because their RSI and OII are equal. When their $RI > 100$ and their $OII > RSI$, they are known as high resilient. When their $RI < 100$ and their $OII < RSI$, they are known as low resilient. By providing appropriate weights to all the dimensions within the construct of resilience, this method is more convenient to measure such a multi-dimensional complex construct through a multi-method approach.

The weightage given in every dimension is not equal. The weights depend upon the magnitude of such dimensions for the individual based on a standard threshold. This threshold is to be derived from extensive research. Our model helps to understand the convergence of the dimensions of resilience. Our method of calculating RI is a unique explanation to measure resilience by providing different weights basing on their importance. By using this method, one can understand the profile of resilient person. The method can be adopted for predicting resilience as well as planning intervention programmes to foster resilience among persons. The proposed hypothetical model and the method of deriving the RI, however, are the subject of further research involving various samples across the globe.

Rigorous quantitative technique, however, create a bottleneck in understanding the connotation of psychological constructs. Primarily when we try to understand resilience as a process, it is too difficult for us to understand the individual differences and its typical variation across situations. No person is resilient in absolute sense, meaning a person resilient in one situation is not found to be resilient in others. We argue that resilience as a product can be measured, whereas as a process it can be explored and understood from the qualitative research paradigm.

Note

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References

- Agabi, C. E., & Wilson, J. P. (2005). Trauma, PTSD, and resilience: A review of the literature. *Trauma Violence Abuse, 6*(3), 195–216.
- Ahern, N. R., Kiehl, E. M., Sole, M. L., & Byers, J. (2006). A review of instruments measuring resilience. *Issues in Comprehensive Pediatric Nursing, 29*(2), 103–125.
- Anthony, E. J. (1974). The syndrome of psychologically invulnerable children. In E. J. Anthony & C. Koupernick (Eds.), *The child in his family: Year book of the International Association for Child Psychiatry and Allied Professions* (Vol. 3, pp. 529–544). New York: John Wiley & Sons.
- Antonovsky, A. (1984). The sense of coherence as a determinant of health. In J. D. Mastarazzo, M. W. Sharlene, J. A. Herd, N. E. Miller, & S. M. Weiss (Eds.), *Behavioural health: A hand book of health enhancement and disease prevention* (pp. 114–129). New York: John Wiley & Sons.
- Bernard, B. (1997). *Turning it around for all youth: From risk to resilience*. Launceston, Tasmania: Resiliency Associates and Global Learning Communities.
- Campbell-sills, L., Cohan, S. L., & Strein, M. B. (2006). Relationship of resilience to personality, coping and psychiatric symptoms in young adults. *Behaviour Research and Therapy, 44*(4), 585–599.
- Chassin, L., Carle, A. C., Nissim-Sabat, D., & Kumpfer, K. L. (2004). Fostering resilience in children of alcoholic parents. In K. I. Maton, C. J. Schellenbach, B. J. Leadbeater, & A. L. Solarz (Eds.), *Investing in children, youth, families, and communities: Strengths-based research and policy* (pp. 137–155). Washington, DC, US: American Psychological Association.
- Cohler, B. J. (1987). Resilience and the study of lives. In E. J. Anthony & B. Coher (Eds.), *The Invulnerable Child* (pp. 363–424). New York: Guilford.
- Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). *Depression and Anxiety, 18*(2), 76–82.
- Cordovil, C., Crujo, M., Vilariça, P., & Caldeira Da Silva, P. (2011). Resilience in institutionalized children and adolescents. *Actamédicaportuguesa, 24*(2 Suppl.), 413–418.
- Dash, A. S., & Nayak, R. (1998). *When life becomes tough: The psychology of living*. Bhubaneswar: Panchajanya.
- Fonagy, P., Steele, H., Steele, M., Higgitt, A., & Target, M. (1994). The theory and practice of resilience: The Emanuel Miller memorial lecture 1992. *Journal of Child Psychology and Psychiatry, 35*(2), 231–257.
- Garmezy, N. (1984). Nature vs. nurture in schizophrenia: The struggle continues (Commentary). *Integrative Psychiatry, 2*(4), 141–143.
- Garmezy, N., Masten, A. S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for developmental psychopathology. *Child Development, 55*(1), 97–111.
- Gu, Q., & Day, C. (2007). Teachers resilience: A necessary for effectiveness. *Teaching and Teachers Education, 23*(8), 1302–1316.
- Hariharan, M. (1990). Invulnerable children: Some studies on disadvantaged children's competence and coping style (Unpublished doctoral thesis). Utkal University, Odisha, India.
- Hariharan, M., Karimi, M., & Kishore, M. T. (2014). Resilience in persons with disabilities: Role of perceived environment and emotional intelligence. *Journal of Indian Academy of Applied Psychology, 40*(1), 97–102.
- Kaplan, H. B. (1999). Toward an understanding of resilience: A critical review of definitions and models. In M. D. Glantz & J. L. Johnson (Eds.), *Resilience and development: Positive life adaptations* (pp. 17–83). New York: Kluwer Academic/Plenum Publishers.
- Kidd, S., & Shahar, G. (2008). Resilience in homeless youth: The key role of self-esteem. *American Journal of Orthopsychiatry, 78*(2), 163–172.
- Kim-Cohen, J., Moffitt, A., Caspi, A., & Taylor, A. (2004). Genetic and environmental processes in young children's resilience and vulnerability to socioeconomic deprivation. *Child Development, 75*(3), 651–668.
- Kobasa, S. C. (1982). The hardy personality: Towards a social psychology of stress and health. In J. Suls & G. Sanders (Eds.), *The social pathology of health and illness* (pp. 3–32). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Lee, H. H., & Cranford, J. A. (2008). Does resilience moderate the associations between parental problem drinking and adolescents' internalizing and externalizing behaviours? A study of Korean Adolescents. *Drug and Alcohol Dependence, 96*(3), 213–221.
- Losel, E., Bliesener, T., & Kofler, P. (1989). On the concept of invulnerability: Evaluation and first results of the Bielefeld project. In M. Brambring, E. Losel, & H. Skowronek (Eds.), *Children at risk: Assessment, longitudinal research, and intervention* (pp. 186–219). New York: Walter de Gruyter.
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*(3), 543–562.

- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, *56*(3), 227–238.
- Masten, A. S., Best, K. M., & Garmezy, M. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology*, *2*, 425–444.
- Masten, A. S., & Garmezy, N. (1985). Risk vulnerability and protective factors in developmental psychopathology. In B. B. Labey & A. E. Kazidin (Eds.), *Advances in clinical child psychology* (Vol. 8, pp. 1–52). New York: Plenum Press.
- Roisman, G. I., Padrón, E., Sroufe, L. A., & Engeland, B. (2002). Earned-secure attachment status in retrospect and prospect. *Child Development*, *73*(4), 1204–1219.
- Rutter, M. (1979). Protective factors in children's responses to stress and disadvantage. In M. W. Kent & J. E. Rolf (Eds.), *Primary prevention in psychopathology: Social competence in children* (pp. 49–74). Hanover, NH: University Press of New England.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, *57*(3), 316–331.
- Rutter, M. (1990). Psychosocial resilience and protective mechanisms. In J. Rolf, A. S. Masten, D. Cicchetti, K. H. Nuechterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 181–214). New York: Cambridge University Press.
- Rutter, M. (1999). Resilience concepts and findings: Implications for family therapy. *Journal of Family Therapy*, *21*(2), 119–144.
- Rutter, M. (2006). Implications of resilience concepts for scientific understanding. *Annals of the New York Academy of Sciences*, *1094*, 1–12.
- Sameroff, A., Gutman, L. M., & Peck, S. C. (2003). Adaptation among youth facing multiple risks: Prospective research findings. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 364–391). New York: Cambridge University Press.
- Tugade, M. M., & Frederickson, B. L. (2004). Resilience individual use positive emotions to become back from negative emotional experience. *Journal of Personality and Social Psychology*, *86*(2), 320–333.
- Ungar, M. (2005). Resilience among children in child welfare, corrections, mental health and educational settings: Recommendations for service. *Child and Youth Care Forum*, *34*(6), 445–463.
- Van IJzendoorn, M. H., Palacios, J., Sonuga-Barke, E. J. S., Gunnar, M. R., Vorria, P., McCall, R. B., . . . Juffer, F. (2011). Children in institutional care: Delayed development and resilience. *Monographs of the Society for Research in Child Development*, *76*(4), 8–30.
- Walker, J. P., & Lee, R. E. (1998). Uncovering strengths of children of alcoholic parents. *Contemporary Family Therapy*, *20*(4), 521–538.
- Werner, E. E., & Smith, R. S. (1982). *Vulnerable but invincible*. New York: McGraw-Hill Book Company.
- Windle, G., Bennett, K. M., & Noyes, J. (2011). A methodological review of resilient measurement scales. *Health and Quality of Life Outcomes*, *9*(8), 1–18.
- Windle, M. (1999). Critical conceptual and measurement issues in the study of resilience. In M. D. Glantz & J. L. Johnson (Eds.), *Resilience and development: Positive life adaptations* (pp. 161–176). New York: Kluwer Academic/Plenum Publishers.
- Zautra, A. J., Johnson, L. M., & Davis, M. C. (2005). Positive affect as a source of resilience for women in chronic pain. *Journal of Consulting and Clinical Psychology*, *73*(2), 212–220.