

Resilience and it's central characteristics, how could we use it? A discussion

University of Brighton, England 2012

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Stress

And you thought there was stress in your life !

Resilience background

- Developmental psychopathology
 - Started as a developmental perspective to understand psychopathology
 - Studies of risk factors among children and adolescents
 - Intention: increase knowledge of the relation between factors that otherwise seem unrelated
- Conclusions were that increased psychosocial risk factors increased the risk for developing psychopathology

Kauai study

- All children born in 1955 on an island at Hawaii were screened
- In all, 698 children
 - 210 children were evaluated to be in a high risk group
 - At the age of 2 years they were exposed to atleast four risk factors
 - Poverty
 - Perinatal health problems
 - Congenital deformations
 - Mothers with low educational levels
 - Alcoholism
 - Violence, little stability and peace
 - Mental disorders among their parents
 - At 18 years of age – 72 of the children in the high risk group were doing fine

Main results from resilience research

- Longitudinal prospective studies found that a significant part of participants did not develop psychopathology despite having been exposed substantial stress
 - Why?

New focus



Resilience

Relative good result despite experiences with situations that have been shown to carry substantial risk for the development of psychopathology

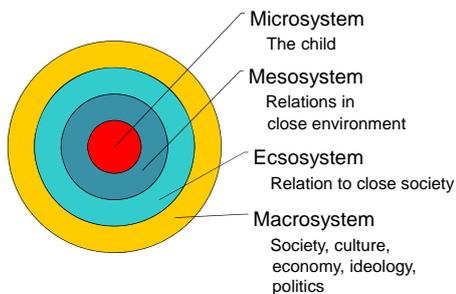
Rutter (2000)

A pattern of active participation and mastering of competences relevant for stages of development, age, culture and historical setting despite experiences that have been shown to carry substantial risk for the development of psychopathology

Consensus among researchers

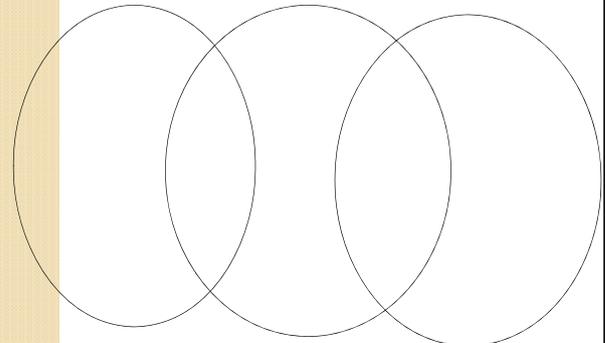
1. Personal dispositions
2. Family coherence
3. Positive support from outside the family
4. (Society and Culture)

Socioecological perspective



Bronfenbrenner (1977)

Childs characteristic Relation Environmental characteristics



Protective factors I

1. Personal attribution
 - Autonomy, self-efficacy
 - Self-confidence, positive self-constructs
 - Flexibility
 - Positive social orientation
 - More empathic, humour
 - Higher level of inner locus of control
 - Orientation toward achievement
 - Good abilities to plan and organize
 - Experience with successful strategies
 - Average or higher IQ
 - Realistic experiences



Protective factors II

2. Family coherence
 - Warmth and emotional support
 - Trusting relation toward one of the parents or care person, (secure attachment)
 - Clear and consistent rules and norms in the family
 - They are good at getting social support from each other or partners
 - They work harder to solve conflicts also within the marriage
 - There is a general absence of discord

Protective factors III

3. Positive support from outside the family
 - Reinforces and encourages attempts of mastery
 - One close person outside the family that is available in times of crises
 - Supporting educational environment
 - Hobbies that demand social interaction and cooperation
 - Living environment characterized by cohesion (solidarity) and few conflicts

Critic toward resilience research

- Definitions are ambiguous
- Different studies use different measures, or screening instruments
- Design in the studies are inconsistent
- Many studies do not capture the dynamic interaction between system and time
 - E.g. in transactional models of risk and result

Overview of resilience findings

- The same variables and processes have been identified in different studies with different methods and designs
- Timing
 - Window of possibilities for transformation from vulnerability to mastery
- Interventions
 - Multi level: Child, family, school, local residence environment, larger society level with mass media

Is it possible to measure resilience related protection?

- ### Advantages of measures
1. Indication of protective resources for groups/individuals
 2. Screen large samples for subgroups of special interest (e.g. for longitudinal studies)
 3. Track changes in protective factors
 4. Facilitates experimental studies
- (Disadvantages?)

RESILIENCE SCALE FOR ADULTS (RSA)

- ### Developing process of the Resilience Scale for Adults
- Content validity:
 - Definition: Relative good outcome despite exposure to situations known to carry significant risk for development of psychopathology (Rutter, 2000)
 1. Personal dispositions
 2. Family coherence
 3. Social support from outside the family (Garmezy, 1985; Werner, 1993, Rutter, 1985)
 - Wagnhild og Youngs (1993) Resilience Scale
 - Developed for elderly
 - Contained only items related to personal dispositions
 - Our aim was to explore the general adult population

Resilience review

- Identification of protective factors through a literature review (1998)
- 15 categories

1. Personal competence	9. Education /professional life
2. Self-efficacy	10. Religion
3. Internal control (LOC)	11. Structured life
4. Temperament	12. Social support
5. Hope	13. Family cohesion
6. Ego-strength	14. Problem solving abilities
7. Self actualization	15. Exposure to stress
8. Social competence	

- ### Generation of resilience items
- **295** items.
 - All positively phrased, Likert items
 - Resilience research is characterized by presence of protective factors not absence of risk factors
 - But, measures of absence of disorders is highly relevant for samples with high risk for disorders
 - Reviews of face validity and readability
 - 3 assistant professors/ clinical psychologist, 8 psychology students, 5 others non-related to psychology
 - 100 items were deleted, **195** were retained

Pilot study

- 195 items were distributed in Tromsø, Norway
- Explorative factor analysis
 - 38 factors satisfied the Kaisers criterion with an eigenvalue > 1.0. These explained 81% of the total variance
 - Gave no theoretical meaning
 - A graphical plot of the factor solution (Scree-plot), which indicates the relative significance showed a significant curve on the **5.** dimension

Pilot study - reliability

- **Five factor solution**

	α	number of items
◦ Personal competence	.92	16
◦ Social competence	.92	12
◦ Structured style	.74	4
◦ Family cohesion	.84	5
◦ Social Resources	.88	9
◦ Total	.93	45
- Hjemdal, Friborg, Martinussen, & Rosenvinge (2001)

Construct validity (N = 648)

Correlations

Instruments	PC	SC	SS	FC	SR
Sense of Coherence	.70	.36	.52	.55	.55
Optimism	.68	.48	.40	.42	.53
Active coping	.42	.28	.28	.23	.30
Satisfaction w/life	.62	.31	.43	.51	.48
Avoidance coping	-.16	-.21	-.18	-.21	-.28
Wishful Thinking	-.35	n.s	-.29	-.20	-.15
Symptoms, SCL	-.67	-.31	-.43	-.50	-.46

(Friborg, & Hjemdal, 2004)

Construct validity

- Differences
 - Comparing psychiatric out-patients (N = 60) with a normal sample (N = 276)
 - Personal competence t = 9.25***
 - Social competence t = 3.30**
 - Family coherence t = 5.33***
 - Social resources t = 2.12*
 - Structured style t = 3.38***
 - RSA total t = 7.78***
 - (Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003)

RSA and number of factors

- Confirmatory factor analyses (N1 = 482 and N2 = 201)
 - Remaining 33 items
 - Six factors
 - (S-B χ^2 (34) = 46.92, p = .07, RMSEA = .030)
 - (RMSEA ranging from .013 to .042)

	α_1	α_2	items
1. Perception of self	.70	.81	6
2. Planned future	.66	.78	4
3. Social competence	.76	.75	6
4. Structured style	.69	.67	4
5. Family cohesion	.78	.79	6
6. Social resources	.69	.77	7

Predictive validity

- Prospective study of students with two measuring points, three months apart (N = 159)
 - Measures:
 - Hopkins symptoms checklist (HSCL-25)
 - Stressful Life Event (SLE 18 items)
 - Resilience Scale for Adults (RSA)

Table 2. Summary of the separate hierarchical multiple regression analyses using psychiatric symptoms at follow-up measured by the HSCL-25 as the dependent variable (N = 159)

Step		HSCL total		
		F cha	R ² cha	β
1	Gender	1.84	0.01	-0.12
2	Age	0.01	0.00	-0.01
3	HSCL-25 pre-test	30.91***	0.20	0.45
4	SLE	0.51	0.00	0.06
5	Resilience total score	0.84	0.01	-0.08
5	Perception of self	0.51	0.00	-0.07
5	Planned future	0.41	0.00	-0.05
5	Social competence	3.46	0.02	-0.16
5	Structured style	1.55	0.01	0.10
5	Family cohesion	0.18	0.00	-0.04
5	Social resources	0.23	0.00	-0.04
6	Resilience total score × SLE	4.12*	0.03	-0.17
6	Perception of self × SLE	0.23	0.00	-0.04
6	Planned future × SLE	14.93***	0.09	-0.30
6	Social competence × SLE	12.25***	0.07	-0.27
6	Structured style × SLE	0.64	0.00	-0.07
6	Family cohesion × SLE	0.00	0.00	0.01
6	Social resources × SLE	0.91	0.01	0.08

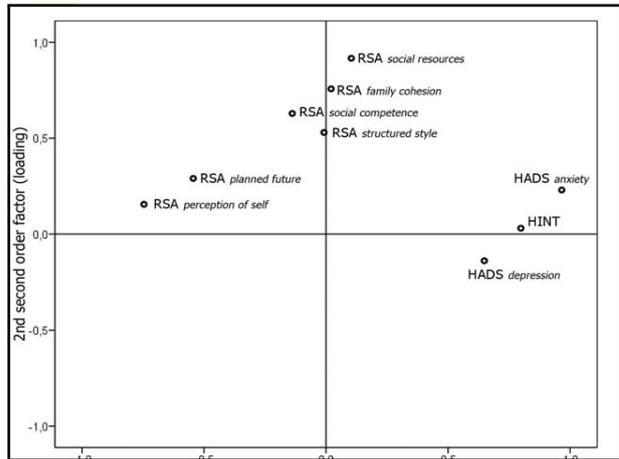
*p < 0.05, **p < 0.01, ***p < 0.001.
SLE = number of stressful life events that occurred between pre-test and follow-up.

Resilience just absence of vulnerability and disorder?

- Protection and risk essentially the same?
- N = 1724
- (Friborg, Hjemdal, Martinussen & Rosenvinge, 2009)

Exploratory principal components analysis

- Specified to 9 factors
 - Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, (1983)
 - Two factors
 - Habitual Index of Negative Thinking (HINT) (Verplanken & Orbell, 2003)
 - One factor
 - RSA – six factors



RSA – Brazil (N = 221)

- Initial indications of cross-cultural validity using confirmatory factor analysis
- **Absolute fit**
 - Chi-square = 929.272
 - Degrees of freedom = 480
 - p = .000
- **Relative fit**
 - RMSEA = .065
- (Hjemdal, Roazzi, Dias, & Vikan, 2009).

RSA – Belgium (N = 385)

- **Absolute fit**
 - Chi-square = 895.65
 - Degrees of freedom = 480
 - p = .000
- **Relative fit**
 - RMSEA = .047
 - RMSEA og SRMR (Beauducel & Wittman, 2005)
 - (Hjemdal, Friborg, Braun, Kempenaers, Linkowski, & Fossion, 2011).

RESILIENCE SCALE FOR ADOLESCENTS (READ)

Resilience Scale for Adolescents (READ)

- It is based on Resilience scale for Adults
 - Items were accommodated adolescents to optimize comprehension and readability based on feedback from adolescence in a pilot project

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Resilience for adolescents and adults

<ul style="list-style-type: none"> Adolescents <ul style="list-style-type: none"> 28 items 1. Personal competence 2. Social competence 3. Structured style 4. Family cohesion 5. Social resources <p>(Hjemdal, Friborg, Stiles, Martinussen, & Rosenvinge, 2006)</p>	<ul style="list-style-type: none"> Adults <ul style="list-style-type: none"> 33 items 1. Perception of self 2. Planned future 3. Social competence 4. Structured style 5. Family cohesion 6. Social resources <p>(Hjemdal, et al 2006, 2007; Friborg, et al 2006)</p>
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Resilience as a predictor for depressive symptoms

- Participants 387 adolescents
- Correlational designs
- Results
 - Higher scores on READ total score and all factor scores predict lower levels of depressive symptoms
 - Even when controlling for age, gender, negative life events, bullying and social anxiety symptoms

(Hjemdal, Aune, Reinfjell, Stiles, Friborg, 2007)

READ as a predictor for depressive symptoms

Step	SMFQ total Adolescent (N = 387)			SMFQ total Parent (N = 240)		
	F cha	R ² cha	β	F cha	R ² cha	β
1 Gender	6.73*	0.02	0.13	1.44	0.01	0.08
2 Age	0.43	0.00	0.03	0.05	0.00	0.02
3 Stressful life events (SLE)	23.34*	0.06	0.24	10.37*	0.05	0.22
4 SPAL-C	148.07*	0.26	0.53	98.76*	0.31	0.57
5 Resilience total score	110.34*	0.15	-0.46	1.21	0.00	-0.06
5 Personal competence	129.06*	0.17	-0.46	4.78	0.01	-0.12
5 Social competence	8.46*	0.01	-0.15	1.64	0.01	0.07
5 Structured style	47.11*	0.07	-0.29	0.13	0.00	-0.02
5 Family cohesion	111.40*	0.15	-0.42	3.86	0.01	-0.11
5 Social resources	70.90*	0.10	-0.37	4.25	0.01	-0.11

READ in young adult sample

- N = 6723, 18-20 years
- Expected **negative** significant correlation with anxiety, depression, suicidal ideation, self harm
- Expected **positive** significant correlation with close friendship, evaluation of general health, parental care

(von Soest, Mossing, Stefansen, & Hjemdal, 2010).

READ and anxiety, depression, and obsessive-compulsive symptoms in adolescents

- N = 307 Norwegian high school students (M = 16.4 years)
- Results: Higher resilience scores predicted lower scores on levels of depression, anxiety, stress and obsessive-compulsive symptoms after controlling for age and gender
- (Hjemdal, Vogel, Solem, Hagen, Stiles, 2011).

Strengths and weaknesses

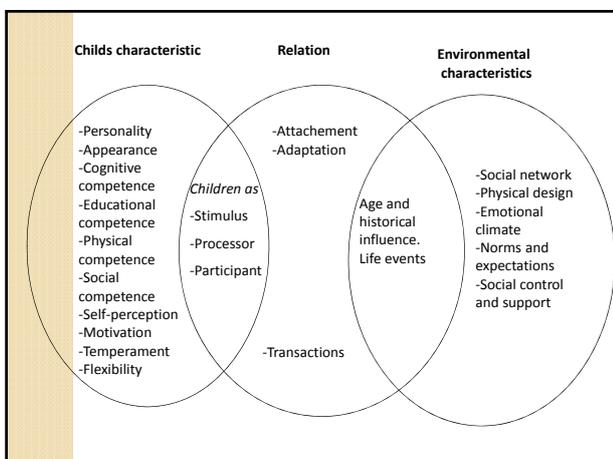
- RSA
 - Established psychometrics and validity in Norwegian samples
 - Initial indications cross-cultural validation
- READ
 - Adequate psychometrics and validity in Norwegian samples
 - Based on a solid foundation (RSA)

Strengths and weaknesses

- General weakness of resilience
 - Incertitude with regards to plasticity of the construct resilience (trait vs. stait)
 - Incertitude with regards to RSA and READ if they are sensitive to change
 - The total scores may hide many different possible combinations of adaptive protection

Ongoing research projects

- Adults
 - Diverse cross-cultural validations
 - The significance of resilience factors in several psychological treatment projects
- Adolescents
 - Diverse cross-cultural validations
 - Intervention project in prevention of social anxiety disorder
 - The significance of resilience factors in psychological treatments of psychological problems



Thank you for your attention

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